The Commercial Car Journal

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Are You Capitalizing the Human Side of Your Sales Force?

Do You Appreciate the Value of Individual Traits? Do You Exercise Plain, Common-Sense Psychology in Your Relations With the Salesmen?

This Story Possesses Unusual Merit in That It Discloses Simple Truths and Plain Facts Concerning Sales Executive Procedure Rarely Found in Print. It Was Written by a Man Who Knows

By C. B. BALDWIN, Sales Manager Garretson Company, Perth Amboy, N. J.

TO my mind, one of the most vital, yet generally neglected factors for success in the selling organization is the capitalizing of the human or psychological side of the various personalities of the sales force. There is no business requiring a higher grade of intelligent application than the selling of automobiles. Consequently, in selecting his human equipment, the sales manager should give great care and consideration to the various types of applicants, for in many instances we are misguided and governed or influenced in our selections by reasons other than those which would be of most value in the long run.

Personalities That Are Salient

Good salesmen are more or less temperamental. This is often construed as egotism, snobbishness, eccentricity or some other unpleasant form, but, I think, it can be viewed in a broader sense and can point out to you that most all successful salesmen are high strung, on edge, full of vim and usually determined to carry out their points. Can you tell me one that is successful unless these qualities are embraced in his make-up?

I like to get hold of a man with some little individual trait that makes him stand out for himself alone. This may be a pleasing peculiarity or an unpleasant one, but, I think, it is a pretty safe guide to go by that such people usually have unusual qualities, which in most cases, can be developed and used to better advantage than those without an apparent individuality in their make-up.

Of course, the other usual considerations such as appearance, reputation, etc., must be satisfactory, but the foregoing is the main issue and means a lot more than apparent surface qualities.

Having secured what, in your judgment, is the best material available, the next step is, naturally, to perfect the entire organization into a smooth and successful selling machine. Now I have ideas on this subject to which many will probably take exception. The usual procedure is to concentrate on the prospects by studying and determining their peculiarities, habits, conditions, surroundings and general make-ups in an effort to discover the main points of resistance and apply a remedy accordingly. A thoro mechanical knowledge of the product is also demanded.

C. B. Baldwin

All this is quite important, as far as it goes, but personally I do not think this is either the basis or secret of successful selling. It is my theory, and I believe it can be proven, that the biggest factor for success lies in developing, to the highest possible point of efficiency, the particular or peculiar qualities of each and every unit on the force, fitting them into their particular niche and applying their abilities individually and collectively in accordance with the policy of the house.

Every individual possesses certain qualities which can be developed, under proper guidance, to a near perfect point, and this to me seems to be the requisite duty of the sales manager, who should be qualified accordingly. Consequently he should be of an analytical turn of mind, possess an exceptional amount of tact, knowledge of human nature, keen perception, patience and the ability to diagnose and determine the strong points of the individuals on his force, and be capable of bringing out, guiding and applying the power at his command to the best advantage for the ultimate success of the object in view.

Of course, a set working policy must be established, but it must be flexible and of such a nature that it can be made to fit conditions, either human or otherwise.

Remove Inside Resistance

Right here I would like to mention that one of the greatest points of resistance in the automobile business and, possibly, in many other lines, comes from the inside. This applies to the employer, whether it consists of an individual or several members, and particularly to the sales manager.

The attitude taken toward a man is often far from the point and in many cases directly antagonistic to that which would be conducive to the molding or developing of the human equipment to a high point of efficiency. This applies not only to the selling end but to all departments. We demand enthusiasm, determination, initiative and ability to carry an undertaking to a successful end, but many of us will put stumbling blocks in the employe's way simply on account of superiority of position. Although we do not advocate arguments and bull-headedness,

we do advocate enthusiasm and determination to put over a viewpoint hard and strong, and if it has the slightest essence of logic to it, I for one, am perfectly willing to thresh it out thoroughly. I do not believe in throwing cold water on such stuff and I would not give a nickel for a man who did not have the courage of his own judgment. Does it not then fall upon the sales manager to encourage the qualities in his own men rather than combat them?

The desire to show authority, which is inherent and under the skin of each and every one of us, must be eliminated and the wise manager is the one who will study and dig deep into the make-up of each individual of his force and endeavor, not by show of authority, not by reason of his position or continual bawling-out or criticism, but by the proper application of advice, encouragement, suggestion, etc., to bring out and apply intelligently the individual strong points that each one of his human units may possess; but, it is not being done.

How many managers take the time to study their men thoroughly and apply the method best calculated and suited to obtain best results? They will pay a salesman big money with the idea that he possesses the knowledge, experience, etc., and is fully capable of conducting his work in the proper manner, yet he won't be in their employ but a few months when it becomes necessary for him to actually fight hard to get permission to make money for his employer.

Manager is More Culpable Than Salesman

Criticism is always welcome to an intelligent man, but it must be based on the logic of the matter on hand and not on the relationship of manager to salesman. I will go further and say that the sales manager who does not study his man thoroughly, completely and from every point of view, is more culpable, more lacking and shows more shortcomings and is, himself, the biggest shirker in it. Now let's see if we can prove it.

Any employe who wastes, spoils or misuses material given him to work with is naturally undesirable and a needless expense. Doesn't it follow then, that the same will apply to any superior or one in authority, who pays out good money to those under his direction and yet doesn't use the material at hand to advantage. The very business we are engaged in, the very products which we are selling—automobiles—are built and sold upon their ability to perform properly, to run smoothly, to give adequate and fair return for cost or purchase price and we do everything possible to make them do so. We cater to their every whim, need or eccentricity; we keep them keyed up to the very finest point by every mechanical means.

Do we do the same with our human material? An answer is really superfluous. We do not stop to inquire why Smith or Jones does so or says this or that; we just don't like it or it does not meet with our approval and we make that fact known very plainly. Never mind why we don't like it; he is working for us and that is sufficient. This is pragmatic philosophy in its worse form.

Wherein the Human and Machine Are Alike

We will cater to our own vanity and make the excuse that it is costing us money to do otherwise. Is it not a fact that we will spend money and pay dearly for personal emolument, gratification or satisfaction? You would not take a hammer to a fine piece of machinery, would you? On the contrary, you would use the most delicate of tools, the finest calculations, adjustments, lubricants, etc., to make it run smoothly. Do we apply the same principle to the human element in our organization? Nine out of ten cases —no. Should we? Yes, from the "gas-boy" or "grease-hound" to the most intelligent and highest paid employe in the organization.

Give me an employer who will establish the flexible and liberal policy, consistent, of course, with good business judgment, and who will take the trouble, time and study necessary to bring out the best qualities from the material at hand, and I will show you a successful automobile dealer.

From the sales manager's standpoint, give me the same kind of an employer and, even if the material constituting the sales force is inferior, I will make more money for him and myself than I will with an employer who does not give as much attention, consideration and time to the make-up of his human organization as he does to the automatic, financial or mechanical end of it.

Mott Comments on Recent Traction Propaganda

"THERE are increasing evidences of a well defined movement to attempt to discredit the motor truck, on the ground that it damages the highway over which it travels," says C. S. Mott, vice-president of General Motors Corporation. "In some states, the propaganda against trucks goes to such lengths that its misstatements are bound to react against it.

"It is perhaps only natural that electric interurban lines, which feel so keenly the freight competition of motor trucks, should feel justified in making a fight for freight business, but they will not get very far by basing their campaign on statements which are not borne out by the facts. Some interurban cars are carrying placards which read: 'Problem in Economics: Ship by Union Traction and save the highways. If a heavy truck earns fifty cents per mile, and damages the highway to the extent of one dollar per mile, and the shipper of freight loses nothing, and the truck owner keeps the fifty cents, and the taxpayer pays the one dollar, where does the taxpayer get off?'

"Whoever is responsible for the figures quoted needs to inform himself more carefully. Trucks do not damage highways to the extent of a dollar per mile. If they did, the Wayne County roads would be damaged to the extent of $450,000,000 per year by only 5,000 trucks operating 300 days in the year over 300 miles of road. There are fully that many trucks traveling over our roads, and the Wayne County road commission reports that surface maintenance, the need for which results from vehicular traffic of all kinds, and not trucks alone, is about $200 per mile per year, or $60,000 for the county.

"Modern practice in road-making keeps well abreast of the demands made on the roads by increasing volume and tonnage of vehicular traffic. Marked advances in highway construction have been made in the last five years, which have also seen distinct advances in the automobile truck. The modern roadway is well planned and constructed to resist the effects of traffic. Moreover, the cost of maintenance, taken the country over, is gratifyingly small.

"If all of the anti-truck propaganda is as inaccurate as its estimates of highway damage by trucks, it will not get very far. It should be said, moreover, that the shipper and the truck owner are not the only ones to benefit by highway transportation; the ultimate consumer, who in the aggregate makes up the general public, benefits, too. And, incidentally, the truck owner, shipper and consumer are all taxpayers and bearing a share of the investment in good roads.

"Rapid vehicular traffic is admittedly hard on road surfaces, and heavy loads are hard on any but the very best highways. There is an economic limit to the advisability of spending money on highways of the best type, based upon volume of traffic and other conditions, but not all the roads of the country have yet been brought to such a state that this economic limit is a very imminent factor. The future of highway construction and use will probably parallel the experiences of railroads and trolley lines.

"Road improvement is constantly being made, in order to keep up with the increased demands made on highways by modern automotive traffic. For the present, the answer to the accusation that trucks damage the roads is to improve the character of the roads. When the economic limit has been reached, it will be time enough to talk of the advisability of curtailing the activity of the automotive truck in order to save the roads. Just now, and especially in times of near-crisis like the present, the truck is demonstrating its usefulness to the public and the nation too clearly to make it likely that selfish propaganda on the part of any interests will discredit it in the minds of the people."

Does This Classification Include You?

Are You a Confirmed Pessimist as to Winter Equipment Profits ? Are You Guilty of Half-Heartedly Planning Selling Campaigns ? Are You Negligent in the Matter of Winter Equipment Service ?

Read This Example as to How Winter Equipment Business Should be Handled

By C. P. SHATTUCK

COMMERCIAL car dealers have not exploited the winter equipment field to the extent they should. A number make it a practice to merchandise certain standard articles, but the majority still continue to concentrate on selling trucks. In large cities, where there are many supply houses, truck dealers are prone to let these dominate the field. In a few instances dealers have awakened to the fact that not only is there a good profit to be derived from the sale of equipment, but that the contact established with the owner is worth a great deal.

But there are far too many dealers who do not realize that some one is supplying the demand for winter equipment for trucks. Far too many dealers do not appreciate the value of maintaining contact with the truck owner and the opportunities thus afforded to make new sales.

I have heard some truck dealers say that there is no profit in winter equipment. These dealers are wrong. The trouble with them is, they do not plan the right kind of a selling campaign and forget the service angle. Here's a concrete example of how **it has been done.**

How It Can be Done

Early last fall George R. and Leigh Webber, proprietors of Webber's Auto Electric Service, Augusta, Me., were confronted by the prospect of reducing their force of workmen. Now in that section of Maine the winters set in early, the thermometer frequently hits 40 below, and there is plenty of snow.

The Weber boys conduct an electrical service station and only make such mechanical repairs having to do with magnetos, motors, generators and ignition units for trucks and passenger cars. They could do a lot of repairing, but inasmuch as the dealers in their territory send in electrical work it would not be good policy for the Webbers to compete in any form.

Not wishing to lay off men the Webbers analyzed conditions and decided that they would formulate a campaign to sell equipment for passenger cars and trucks. A study was made of the requirements of the cars and a half a dozen items selected, the trade papers being culled for articles of merit and practicability. An Addressograph was purchased and a list of some 800 names made up, these comprising trucks and passenger cars.

Weekly Messages Produced Results

A series of eight Monday Morning Messages were compiled, so-called because they were sent out so that the owners received them Monday mornings. The messages were printed in various colors on heavy manila stock, 5½ x 8 in. The top line of the message had a line, "Monday Morning Messages—Watch for Them." The lower space was given over to the name and address of the concern and in one corner was a storage battery message which was changed each week.

The messages were cleverly gotten up. They carried a punch and the display lines readily caught the eye and the copy held attention. A feature of the copy, which is reproduced herewith, is that it made a practical appeal as well as one to the pocketbook of the New Englander, and the latter is a close buyer.

The messages were started out about the latter part of September.

The first one is shown in the lower left hand corner of this page.

The messages were followed up, of course, with letters, etc., and emphasis laid upon the safety first principle when driving in rain or snow. A lot of cleaners were sold, the free installation or service feature making a strong appeal.

A Drive on Headlight Lenses

The second message dealt with headlights. Now the greater number of trucks in and around Augusta are of light capacity and are, with few exceptions, equipped with electric lights. At the time the campaign was started the State authorities made a drive against glaring

Glaring Headlights Are a Nuisance and a Source of DANGER to Everybody

Good lenses, properly aligned lamps, bulbs correctly focused and clean reflectors make it possible for you to drive safely even though you are forced to meet glaring headlights.

WE ARE HEADLIGHT SPECIALISTS

and have set up in our shop apparatus and equipment which, with our knowledge, makes it possible for us to give you perfect lighting. It is not expensive and we guarantee satisfaction.

NOW IS THE TIME!

As the "RUSH" season comes to a close, like ALL GOOD MEN AND TRUE we like to keep busy—so we are going to make you a proposition

HERE IT IS!

Purchase from us a ——— WINDSHIELD CLEANER at the regular price of $, and we will install it FREE. This offer good until January 1.

headlights, and owners were compelled to have their lights properly focused, proper lenses installed and to secure a certificate from an officially appointed inspector. The Webber boys purchased a device which permitted testing of the lamps by daylight, and they also issued certificates. A drive was made on this work and on lenses, the message appears on page 11.

In the follow-up the attention of the prospect was called to the requirements of the law and that the Webbers knew how to make lights legal and a perfect driving light. A standard make of lens was merchandised and the copy went on to state that "We use the ——— lens because they are legal in every State and we will make you the following agreement: Whenever the ——— lenses are declared illegal in Maine we will cheerfully refund the purchase price on any unbroken lenses which were purchased of us."

Guarantee Plus Service Sold

This message overcame the sales resistance generally present with the prospect who delays for fear that a certain make or makes may be taboo in time or after the legislature completes its work. A large number of lenses were disposed of and the campaign was not confined to Augusta alone, but to surrounding territory. Owners who were attracted by the guarantee were also prospects for adjusting, aligning and focusing.

Good signals are essential and necessary to safe driving on the Maine highways and the Klaxon line was taken on. The message dealing with these signals is shown above.

A line was incorporated calling attention to a special horn for Fords and the price quoted included installation. There are quite a number of Fords, of course, and a large number were sold as a result of this special drive.

Comfort for the Driver

With the thermometer 40 below, and keeping the truck in a cold garage as they do in Maine, starting the engine is not an easy task, so the Webber boys selected a priming device and got out the following message which went over big. On this message was a line asking the prospect not to throw away the message unread as "We Both Lose."

Driving with 40-below temperatures makes for cold hands and inefficiency of the truck driver so an electrical device for the steering wheel was selected and a message gotten out as follows:

MAKE WINTER DRIVING COMFORTABLE

For those who drive in COLD WEATHER. They keep fingers limber, and hands and body warm, make it safer to drive and prevent doctors' bills.

Used by thousands of motorists and guaranteed for five years. They are simple, cost nothing to operate and they make winter driving a pleasure.

WE LIKE TO KEEP BUSY SO WE INSTALL THEM WITHOUT CHARGE FOR LABOR IF PURCHASED OF US.

Attention of the reader is directed to the last line, which, after all, is the meat in the nut insofar as the dealer is concerned in selling any equipment requiring installation on the truck. It has been argued that the truck dealer cannot compete with the cut price supply house in the cities, or with the mail order concerns which send out attractive and tempting literature to the owner.

KLAXONS GET ACTION—

When Action Means Safety

IF YOU drive on slippery streets, in rain or sleet, on city pavements or country roads, hundreds of times daily you need a real WARNING SIGNAL.

The KLAXON is just that—it responds instantly with a sharp clear call that demands attention and gets it, without insulting.

When purchased from us it is installed on your car without charge for labor.

Official Klaxon Service and Parts.

Flat Rate the Big Feature

The line referred to, carries a message, which if properly followed up in the sales letter or talk to the prospect sells the goods. Why? Simply because the average device requires experience plus proper tools and equipment for installation and where the truck dealer's service station does the installing it can be done at less cost plus better satisfaction than can the purchaser himself or the average repair shop which only occasionally installs the device. There may be some who will disagree with the writer on this point, but if the service station of the truck dealer does not know how, and can't do a better, quicker and cheaper job, hours of labor considered, than the owner or garage, then the head of the dealer's service station should get busy and find out where the leaks are.

As has been repeatedly pointed out by the writer in articles dealing with the selling of equipment by the truck dealer, there is no competition by the cut price supply house because the supply house does not install the devices. And they cannot very well do so for if they did they would have to make a charge, equip a shop and get a profit to take care of the overhead of that shop. And they will never do it.

Another advantage the truck dealer has over the supply house is that his service head or mechanics know the characteristics of the truck they service, what type of device obtains the best results and which is the cheapest to install from the labor viewpoint.

How Manufacturers Can Sell

It is the opinion of the writer that manufacturers of truck equipment, especially articles similar to those merchandised by the Webber boys, would develop a greater market if they made an effort to educate the truck dealer as to how and when to sell—plus the service angle. And better satisfaction which, after all means greater sales, would accrue, if the article was sold on the flat rate basis, i.e., price installed.

ANOTHER GOOD ONE THIS WEEK

If you keep your car in a cold garage you should have it for your own protection.

It saves excessive drain on the battery
It makes unnecessary the use of hot water to start
If your car hasn't a self-starter and you have to crank it yourself; Oh, LORD, HOW YOU NEED IT!!!!

The ——— PRIMER

Delivers an easy-to-fire mixture to the RIGHT PLACE when you want it, and makes starting almost instantaneous. They do not get out of order and this year WE INSTALL them for $.... on any car.

Sales resistance is built for an article if the cost of installation appears to him to be out of proportion to the list price or cost of the article. I know of cases where a moderate priced piece of equipment cost the owner nearly the price of the article for installation. Why? Simply because the mechanic in the garage lacked experience in installing the device plus the fact he had not the proper equipment.

Satisfaction and Dissatisfaction

In several cases coming to the attention of the writer ordinary breast or manually operated drills were employed to cut through the metal dash, whereas an electric drill would have done the work quickly, accurately and a darned sight cheaper for the owner. Profit in merchandising winter equipment for any car, truck or passenger is based on the turnover and many turnovers result only where the customer is satisfied with the article and he is not if it costs too much to install. The average owner cannot be sold a $5 article if it costs $2.50 to install it. He is not considering the $5, but the charge of $2.50. If the article is presented, price quoted at $7.50 installed the owner will purchase faster and be better satisfied.

Why Flat Rate is Successful

It is the fear of the unknown factor, total of labor costs, that is responsible for lost sales in equipment just as it is in repairs. Tell an owner what it costs complete and the chances are that he can be sold, but if he feels that the installation cost is high he will pass up the article. There is no reason why a truck dealer cannot flat rate—the cost and labor charges—of any piece of equipment sold and installed. The business man is too busy to go into details of cost plus labor, and the right way to sell him is to quote the net price. And with the dealer standing in back of the article, guaranteeing it, the dealer saves selling expense.

The Webber boys accomplished last fall that which they set out to do—keep their working force intact, and thereby meet the winter overhead. They did better than that, for they made money on the campaign and are planning another now for this fall and winter. There is another profit that should be mentioned in connection with the campaign and that is, it brought a large number of new customers to the service station and these were sold the electric service rendered. The prospect list grew from 80 to 1250 and this is a live list for the dead ones are culled out.

When Campaign Should be Started

Now, if the Webber boys in a small place can sell equipment for trucks in a small territory and develop a real market, why cannot the truck dealer where climatic conditions are more favorable, do likewise? They can if they put their best efforts behind a campaign and sell the truck owner along the lines mapped out. There are a number of articles adapted to the truck. There are thousands of trucks not equipped. It is a big market, but it should be gone after now.

Now is the time to analyze your market, Mr. Dealer, pick out your lines, build the prospect list, and get busy. Goods cannot be sold without selling effort. The manufacturer can advertise his head off in newspapers and by mail but it is up to you, Mr. Truck Dealer, to put over the selling campaign with a flat-rate-plus service angle. The time to get started is in September.

Seven Safety Days Planned by Highway Board

Invitations to fifty representatives from each of seven groups concerned in highway safety are bringing a deluge of suggestions for incorporation in a national safety campaign planned to retard the accident and death toll of the country due to traffic mishaps, according to announcement by the Highway Education Board.

Almost without exception, replies indicate an eagerness for such a campaign, stressing the timeliness and need for a national movement of this nature. Groups requested to offer suggestions include pupils, teachers, superintendents of schools, automobile clubs, chambers of commerce, police officials and dealer associations.

Outstanding suggestions received to date, it is said, include a national essay contest among all pupils doing class room work in the fifth to eighth grades, a national safety lesson contest among teachers, the observance of "Seven Days for Safety," and the distribution of "Pledges of Carefulness" among pedestrians and drivers alike. October 8 to 14 seems the date most favorably agreed upon for the observance of "Seven Days for Safety," according to the general tenor of the letters received.

Several weeks ago the National Automobile Chamber of Commerce offered to set aside approximately six thousand dollars in prizes for the best safety essays and lessons if sufficient interest was indicated. If the date of October 8 to 14 is definitely fixed for the observance of "Seven Days for Safety," or "National Safety Week," it is expected that those in charge of local campaigns will arrange their dates to conform, and their activities to include the salient features of the national movement.

It is believed the demand for the safety essay contest and lesson contest is largely the result of a similar campaign conducted by the board last year, in which more than four hundred thousand pupils and teachers submitted manuscripts. One of the activities suggested for the observance of "Seven Days for Safety" is the setting aside of one day for "National Fire Prevention Day," and another, with regard to the traffic problems surrounding schools, the organization of traffic patrols among the larger boys of the various schools, whose duty it shall be to guide smaller children as they go to and come from their classrooms.

It is estimated that the motor-driven vehicles in the United States have a power equal to that of more than 300,000,000 horses while the total number of horses and mules in the country is less than one-tenth that figure.

All-Purpose Farm Body Popular With Farmers

The American farmer is practicing economies in solving his transportation problems, as proven by figures compiled by the statistical department of the Republic Truck Sales Corp., at Alma, Mich.

Thirty-three per cent of the farmers interviewed in a recent questionnaire sent out by the company, expressed their preference for the all-purpose farm body type of truck, as the one best suited for their general needs on the farm.

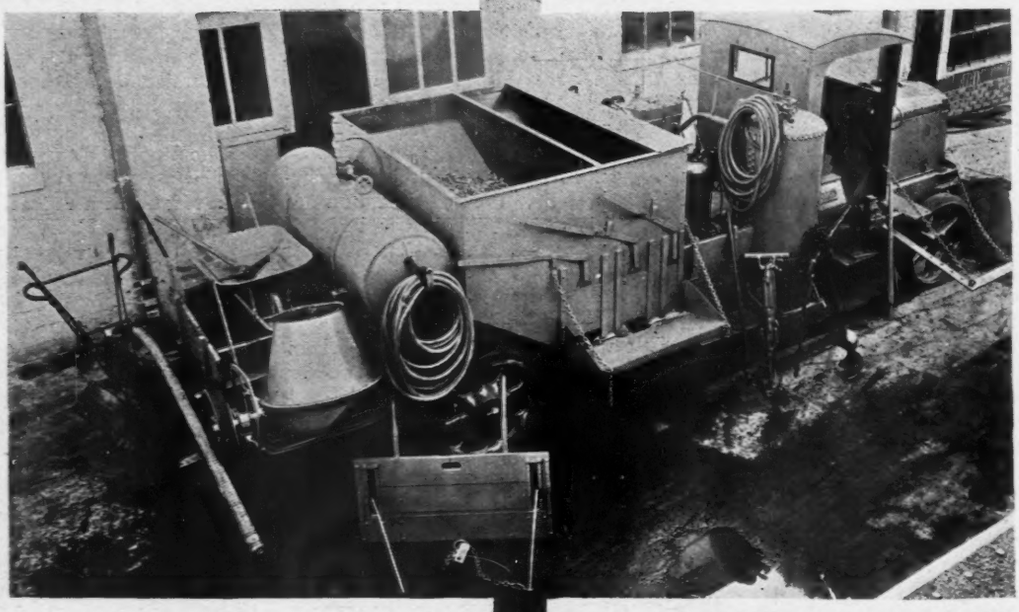
Twenty-five per cent expressed a preference for the box type of body, 22 per cent for the express type and 20 per cent for the rack type of body. These percentages are right in line with the percentage of sales in each type to farmers by Republic.

Remarkable Records Were Established by This New Kalamazoo Speed Truck in Its Recent 100 Hour Non-Motor Stop Run

The run was made as part of the program of the tests which have been laid out by the Kalamazoo Motors Corp., Kalamazoo, Mich., to give this new model a thorough trial before placing it on the market. This truck with a load of 2,250 lb. covered 1,972 miles, an average of 19.7 miles per hour. 138 gallons of gasoline and 14 quarts of oil were consumed. The fuel average for the entire run was 14.3 miles per gallon of gasoline and 141 miles per gallon of oil.

This Interesting Highway Maintenance Truck, Used by Kerns County, California, Serves as an Economical All-Purpose Unit

It is equipped with combination material bins and a rotary concrete mixer driven by an auxiliary shaft from the transmission. The bins are constructed of steel and have a capacity for 1000 pounds of cement, one cubic yard of sand, two cubic yards of gravel or rock All bins have gravity feed chutes controlled by hand-operated gates leading to the mixing apron. To protect the cement from moisture the cement compartment is fitted with a steel cover. Located between the bins and mixer there is a 150 gallon steel tank which discharges water by gravity or air pressure. For filling the tank from wells or streams a centrifugal pump with a self-priming device and suction pipe is used. The concrete can be placed directly from the mixer or wheeled to the place where repairs are being made with a large steel wheelbarrow carried on the truck. In breaking up damaged places pneumatic jack-hammers are used and a pneumatic air jet blows out the refuse while chipping guns are used in chipping out cracks. An air compressor, belt-operated from the forward drive-shaft, supplies the air, and the receiver is mounted back of the cab.



Upper Left: Preliminaries in Concrete Repair Road Work. Compressed Air is Used Extensively in This Repair Work. Upper Right: A Road Scraper Being Pulled by the Truck. Center: General View, Showing the Lay-out of This Completely Equipped Maintenance Truck. Lower Left: Showing How the Truck's Power is Utilized in Preparing the Road's Sides. Lower Right: Chuting the Concrete Direct From the Mixer to the Point of Placement.

Farm Market Fertile Field for Cultivation of Truck Sales

Farmer Questionnaire Discloses Unanimity as to Truck Economy on the Farm. Trucks Reduce Farm Labor Costs. Truck Sales Possibilities Relatively Greater in Smaller Communities Than in Large Centers

By E. A. WILLIAMS, Jr., President Garford Motor Truck Company

FROM the Atlantic Ocean to the Pacific Coast, from the Canadian frontier to the Mexican border, the degree of our success commercially, financially and nationally depends on the production of the soil or in other words the products that originate from the ground.

It is predicted that this autumn will witness big crops. Naturally this will reduce the cost of living. It will enhance business. The wheels of industry generally will hum. Money will circulate because the individual buying power of the average man will be greater.

The development of the upward business trend will automatically place the farmer in need of transportation for his produce. It will place him also in a safer position financially. The farmer may be in need of trucks although he does not always buy in accordance with this dictate.

The farmer will buy what he wants and consider the equipment he needs. The passenger car is a shining example of this truth. Most farmers have a car for emergency, then why not have a motor truck for efficiency?

An analysis of this situation indicates clearly and proves conclusively that the motor truck dealers of smaller towns are **overlooking a big opportunity** when they do not try to sell the farmer. He is not a possible market. **He is a market.** He does not wait for development, but is responsive to **demonstration.**

The passenger car dealer sold the farmer the idea of the automobile for recreation—and they did a good job. But, alas, there is a difference. Our passenger car cousins **did** what we in the truck business are thinking about.

Crop Outlook Good

One of the most prominent statisticians predicts that the latter months of the year ought to be quite prosperous. Why? Because "The crop outlook is the best in years. The harvest promised is large and prices are fair. Hence, 1922 crops should benefit both the farmers and other consumers. Estimates indicate that the value of grain and cotton harvests at the farm will be more than $5,500,000,000. Last year they were $3,700,000,000. This indicates that the majority of farmers will get about fifty per cent more for their products than they did a year ago."

Such information as the foregoing is not only encouraging mentally and stimulating physically but is reassuring from an authoritative pen.

Economic Wealth From the Ground

In western Canada, Alberta, Manitoba and Saskatewan, everybody is talking big business, everybody is looking for better times. Why? Because there is every hope of enormous wheat production.

In the Dakotas business men are talking new buildings, light investments, substantial returns. Why? Because the crop outlook is the biggest in years.

Over in New York State the factories are beginning to run full time, if not already. Money is not so **tight** over there now. Business houses are opening branch houses throughout the state. People over there are spending money. Why? Because the fruit returns per acre never were so bountiful. In and around the fruit section of Medina there is a clarion call for motor trucks to move over 5,000 bushels of peaches. And this from one little area only.

E. A. Williams, Jr.

Out in Arizona the passenger car men are selling lots of cars. Men of affairs are buying new land leases. Business houses are employing more help and paying good wages. Why? Because the copper mines have reopened and will continue to operate.

In the South new business connections are being negotiated. Factory representatives are being maintained throughout the South. For a long while money throughout the South barely dripped; now it is beginning to flow. Why? Because the cotton harvests are good. Growers are making money; they are spending it.

Whether it be minerals mined from the bowels of the earth, crops that spring up from nature's verdure or luscious fruit that shoots from sprighting trees, the source of our living, our working and our happiness comes directly or indirectly from the ground.

The meat we eat, the milk we drink, the wool we wear, was fed, was nurtured and was strengthened "out **on** green pastures." This is a fundamental of nature's laws that determines the swing of the business pendulum.

From the above statement it is evident that as the farmer has expended money for passenger cars, he is open to conviction on motor trucks to haul his produce taking advantage of top prices in the prevailing market, preventing waste of fruit, avoiding rejection of milk soured en route due to jolting of rig or delay in train and maintaining the weight of cattle which we have proved the motor truck can do.

Farmers Own One-Third Total Autos

There are six and one-half million farms in this country, according to statistics also more automobiles are owned by farmers than by any other single buying class. Thirty-three per cent of the cars today are in districts with less than one thousand population and twenty-two per cent in communities between one thousand and five thousand. These figures are accurate and check up with state registration statistics which would indicate the heaviest use of cars in farming regions, such as Iowa, where there is one car for every six persons.

Of the 6,500,000 farm owners in the United States, 3,080,810 own motor cars. It was only the sales effort of the passenger car dealers that achieved this. Their persistent appeal to usefulness, saving of time, of labor, of money and to happiness generally made this possible.

An investigation of farm productivity discloses that farmers operating cars show a gain of 68 per cent. This is a very important figure and if a car affords the indi-

vidual farmer this increase in production and financial results it seems logical and certainly very reasonable to assume that a truck would afford a relatively increasing profit.

It is appalling to know that where 3,080,810 automobiles are owned by farmers only 150,000 trucks are owned and operated by them. There is only one of two deductions that can be arrived at, either the motor truck is a gross failure as a means of hauling butter, eggs, milk, fruit, vegetables, cattle and feed (and we know it isn't) or we have been too anxious **to stick around town and sell to the dray-man or merchant** while we might just as easily get out and around and **sell to three farmers.**

I am not asserting or stating when I write these things. I am not telling you something that is foreign to your ears or startling to your eyes, I am merely **reminding** you of what you have witnessed on our highways and along our byways.

Farmers need trucks; their desire for trucks is burning, but they will never buy; they must be **sold.** Literally speaking, you have seen hundreds of farmers hauling their produce in to town. They pile it into the car, up on the seat, hurdle it on the back and hitch it to the running boards. You have seen such a conveyance with the addition of a trailer loaded to capacity. The baggage of the return trip usually consists of sacks of seed, lawn mowers, turnip cutters or other equipment necessary around the farm.

With these thoughts in our minds who dare say the farmer is not in need of trucks? He **is** in need of trucks. He wants at least one. Sell to him. Sell to him right away. Don't wait.

Trucks Reduce Farm Labor Costs

Some months ago a farm publication made an investigation through questionnaires of 1,500 farmers owning trucks. The replies were unanimous and substantiated every claim put forth by motor truck manufacturers. The following figures were 20.9 per cent of the farmer truck owners compiled from the information turned in: maintained that they performed the same amount of work on and around the farm with fewer men; 61.9 per cent replied that with the same number of men as hitherto they accomplished more work; 14.3 per cent supplied the information that they did more work with fewer men. Needless to say, on the class of farming depends the amount of labor necessary. There is no instance, however, where the truck necessitates additional men.

It is neither right or logical to assert that the truck will displace the horse entirely. This is possible only under certain working conditions. As it was, 33 1/3 per cent of the truck owners who returned these questionnaires stated that they still used the same number of horses or mules. On the other hand a few claimed the truck had displaced from one to twelve horses.

A truck need not replace horses to make it a profitable investment, but a truck **saves** the horse in that it does **additional** work to which the horse is not so well adapted.

Time is a big factor in the process of farming as in any other business. The U. S. Department of Agriculture threw considerable light on this situation when they issued their bulletin number 910. A compilation of farm truck owner reports as contained therein shows the time saved in hauling the following products by different sizes of trucks.

Size of Truck	Crops %	Milk %	Feed %	Fertilzr. %
½-ton	53	52	35	
¾-ton	60	42	53	57
1-ton	65	57	62	52
1¼-1½-ton	67		66	63
2-ton	71		75	75
Over 2-ton	71			

Here we have evidence, circumstantial evidence, of the time-saving element embodied in trucks for the heavier class of farm products. The farmer is convinced of this time-saving factor in hauling baskets of fruit. If he were not, he wouldn't convert his passenger car for this purpose. He cannot haul crops, heavy cans of milk, bales of hay and fertilizer in his car, therefore cannot prove the time-saving virtues in hauling heavy produce by truck. As perpetual running of the water wears away a stone, so does consistent appeal and **demonstration** convince the farmer and tend to make him change his tactics.

Chances Good for Sales to Farmers

There are over 35,000 passenger car dealers in this country and approximately 25,000 motor truck dealers. In the small communities there are about three passenger car dealers to one motor truck dealer, then the latter is usually conducting only a little bit of a dinky truck business "on the side." If a man wants to buy a truck he knows where to go and get it.

Relatively speaking, the possibilities for truck sales to farmers in the smaller communities is greater than in bigger centers. One reason for this is that this class of prospect is not being "worked" by the average small town dealer and competition is not so keen. This condition is out of proportion to the actual opportunities and is one that should be given consideration by every motor truck distributor and dealer.

The farmer today **is** a prospect for trucks, but he must first have an explanation of what a **real** truck can do for him. He must first be taught to look for dependability and not low purchase price. He must first be shown how to make a truck operate economically. He must first have a **demonstration** not of the quality of the truck but of qualities in operation.

The farmer of today is a recognized business man. He is a man of known qualities, a man of specific details and definite understanding. When approached through any or all of these mental attitudes he will respond, sometimes effectively according to the degree of selling ability with which he is confronted.

The farmer **does** know that a passenger car chassis cannot serve effectively, economically and efficiently as a truck. He is sold on this and no one can budge him. He is a man of fixed ideas. The farmer will argue that if a passenger car can be converted into a light truck why do truck manufacturers design and build heavier chassis? He knows why and appreciates why. Then for this very reason he is a good prospective buyer for truck equipment. He has a keen sense for values and is appreciative of what rugged construction means in hauling heavy loads.

The sale of trucks to the farm market is unlimited. Sell to the farmer. Sell to him right away. Don't wait. But don't try to sell him a converted passenger car.

Miller Publishes Financial Statement

The report of the Miller Rubber Co., for the six months ending June 30, 1922, showed sales of $12,119,741.77 as compared with $9,445,822.43 for the corresponding period last year.

This is an increase of 23 per cent in dollars and an excess of 100 per cent in production and sale of tires in pieces. The company's strong dealer position was very materially improved during the first half of the year. Prices are extremely low and it is impossible and unwise to make any predictions for the ensuing six months. The net profits after interest, depreciation and all charges except Federal Income Tax are $1,026,317.88.

What Did the Poor Race Horse Do Before the Truck Era?

Yes, this is the world-renowned Man O'War and his own "private car," a Model 15 one-ton Garford truck, manufactured by the Garford Motor Truck Co., Lima, O. The truck is equipped with a special closed panel body, roomy and well padded. A motor vehicle was found necessary in order to avoid delay in transportation and to insure the utmost comfort and quiet. Due credit is given A. W. Skinner & Son, Garford distributor at 135 East Short St., Lexington, Ky., for this ingenious rolling stable.

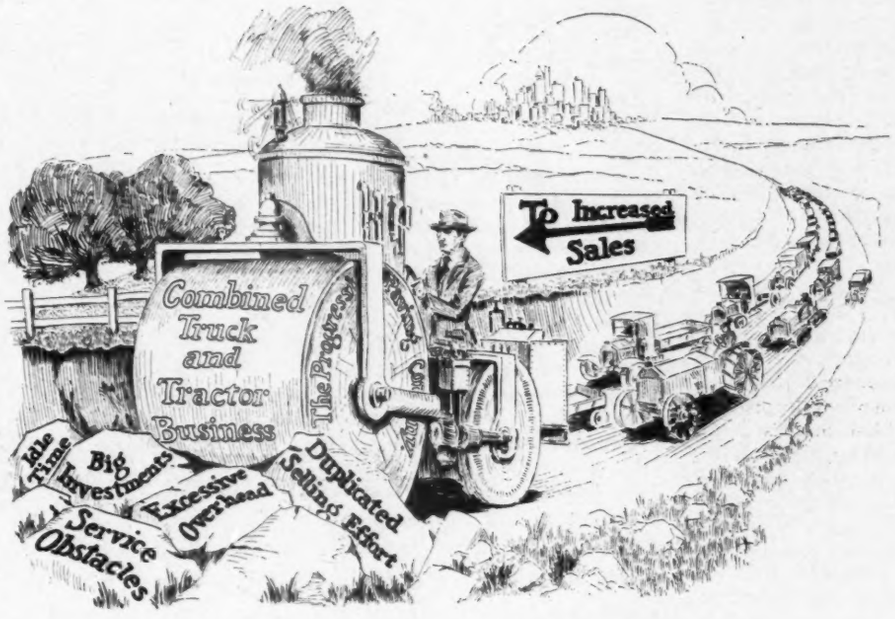
Truck Plus Tractor Equals More Profitable Business

Considered From Cold Business Fundamentals and Principles, Combining Truck and Tractor Business is Sound and Logical Procedure

By ARNOLD P. YERKES, International Harvester Company of America

THE ideal business is one which is evenly distributed throughout the year. This means lower overhead expenses because employes and equipment are profitably engaged at all times instead of being practically idle at certain periods as is all too frequently the case.

Because of this well-recognized fact, every business man endeavors to so arrange his business as to have it operate at normal capacity as much of the time as practicable and anything which he can do to spread the peak loads and fill in the low spots is counted as so much gained.



Smoothing the Highway to Better Business

One of the best examples of this kind is found in the ice and coal business. When the ice business is good, the coal business is slack, and vice versa. These two lines of business therefore fit together splendidly and make a business which is well distributed throughout the entire year. Furthermore, the same men, and a great deal of the same equipment can be used in both lines. These facts account for the frequency with which we find companies engaged in the ice and coal business.

There are many other lines of business in which similar combinations are found, all with the same end in view, and every day new ones are being added to the list. One which is frequently in this class, and will doubtless be even more so in the future, is the motor truck business.

The dealer who is engaged in selling motor trucks is in a comparatively new industry. It is one which has had a remarkable growth in the past and seems destined to have an even greater growth in the future. It is nevertheless a business which is more or less seasonal. There are certain months when trucks can be sold more freely and easier than at other times. These seasons will vary in different communities, depending upon the industries using the trucks. In only a few of our large cities, however, is the truck business well distributed throughout the year and even in such cities, it is seldom as well distributed as could be desired.

Comparatively few of the total number of motor truck dealers, however, are located in the large cities. Furthermore, the largest market for motor trucks is not found in the large cities—it lies in the country districts, the same as does the largest market for automobiles.

How Business Extended Itself

It is probably true that up to the present time the largest percentage of motor trucks has been sold to commercial concerns located in cities and towns. It is also true that until a few years ago most of our automobiles were sold in cities and towns, but within the last three or four years this has entirely changed and now the country districts are the greatest buyers and users of motor cars.

The same situation will shortly be reached in the motor truck industry if it is not already here. Each year finds farmers and business men in our villages and small towns buying and using motor trucks at an increasingly greater rate. The improved roads throughout the rural districts, and the rapid extension of such roads, mean that the use of trucks for country use will come about much faster than did the use of automobiles, which was largely retarded by the absence of good roads.

It is obvious, however, that the sale of motor trucks for country use will be more or less seasonal, and it is just as obvious that dealers who expect to sell the motor trucks which are going to be purchased by farmers in the next few years would be greatly benefited by some other line which would dovetail into their truck business and fill up the low spots somewhat.

Why Truck and Tractor Should Dovetail

The farm tractor seems to offer the most logical solution to this problem so far as the truck dealers in small towns and villages are concerned. It does not fill up all the low spots in the truck business, it is true, but it does fit into some of them splendidly. Furthermore, it has the added advantage of being a line which can be easily handled by the same salesmen, repair men, etc., as are employed in the selling and servicing of motor trucks. It also has the advantage of being a machine which can be sold to a former customer, provided the customer's previous experience has been satisfactory.

Tractor Business is No Misnomer

There are doubtless some truck dealers who have watched the tractor business and seen some of the difficulties which it has encountered and who feel that it is a line which they do not care to take on.

However, the fact must not be overlooked that the tractor business, although it has been established for as many years as the motor truck industry, has developed somewhat slower and has gone through a good deal the same sort of development as occurred with the motor truck. Its progress the past few years, however, has been rapid and had it not been for the great depletion of the farmer's buying power during the last year or two, it would undoubtedly have been almost abreast of the truck business. There is every indication that the tractor sales in the future are going to continue at a very satisfactory rate and it is not at all improbable that such sales will equal those of motor trucks.

The farm field for both tractors and trucks is largely untouched. A comparatively small percentage of the farmers who can use both tractor and truck to advantage has as yet been sold. The remainder will come into line rapidly as buying power returns. Furthermore, it is quite probable that a great many farmers will purchase a tractor before they purchase a truck. As a matter of fact, it is safe to say that most of the farmers who today own both tractors and trucks bought the former first.

Tractor Outlet Not Confined

The field for tractors, however, is by no means limited to the farm; the sale of these machines for commercial purposes has already attained considerable proportions and seems destined to increase very rapidly in the future. Either a tractor or truck can be substituted with economy and satisfaction in almost every case where horses have been used. Manufacturers, contractors, and men engaged in many other kinds of business, have been quick to realize the value of the tractor and have been heavy buyers for some time. The economy of the tractor is even more pronounced for such purposes than for farm work for several reasons; in the first place, where horses are used in commercial industries hay, feed, litter, etc., must be bought at the highest retail prices, with cost of transportation and delivery included. Furthermore the horses require daily attention, which means Sunday and holiday pay for men to look after them, whereas with the tractor no attention whatever is required when it is not in use. In many cases where horses are used for this kind of work, their life is considerably shorter than on farms, and hence the item of depreciation is excessive. It is not to be wondered at, therefore, that business men who have heavy work about their yards or in connection with large contracting jobs, have turned to the tractor as an excellent solution of their power problem.

Tractor Field Practically Untouched

It may also be said of this field as in the case of the farms, that its possibilities have scarcely been touched. It is the belief of many people that this country is to experience an era of building and engineering construction, particularly of good roads, and if this program is realized there will be need for large numbers of tractors to assist in such work.

It should be unnecessary to point out the fact that such a program will also involve the use of thousands of motor trucks of all sizes, and here again the dealer who is able to sell a contractor a satisfactory machine of one kind will have an excellent opportunity to obtain the order for the other also.

Many Points of Similarity Make the Combination Feasible

It is readily apparent that tractors and trucks have enough similarity to make it comparatively easy for a good salesman to handle both. Both require the same kind of knowledge and information on the various details concerning the engine, transmission, etc., and a salesman who is really competent to discuss the details of motor trucks will have little difficulty in becoming equally well informed concerning a tractor.

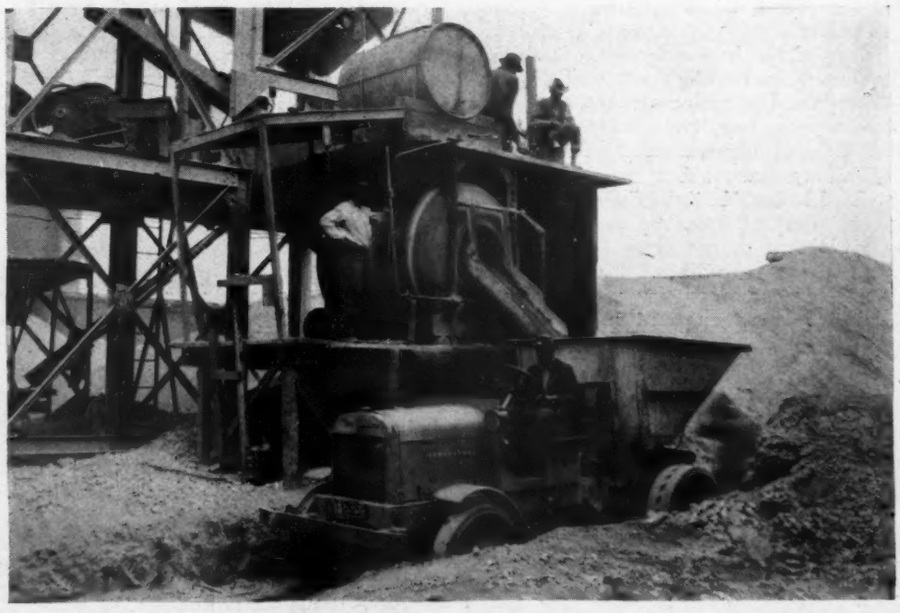
It is true that many buyers today select their mechanical equipment largely through the reputation of the manufacturer and his product, and care little about the mechanical details, but on the other hand there are always some buyers who are well posted on the mechanical construction of their equipment and insist upon knowing all about such features on new machines.

It requires salesmen who are thoroughly conversant with the mechanical features of their line to deal with such prospects. If a dealer obtains such a salesman for his trucks he may just as well make use of him to sell tractors also.

Service is Greatly Simplified

The matter of repair service is one which has become an important one in connection with both the truck and tractor. The largest and best dealers in both lines are usually prepared to render full repair service and maintain the necessary shop equipment for this purpose. Here again the two lines fit together splendidly because a great deal of the repair shop equipment needed for one can be used equally well for the other. This means lower overhead cost on such work, and also means a better distribution of repair jobs, inasmuch as the busiest seasons for tractor repairs are not likely to come at the same time as those for motor trucks.

It would be absurd to make the claim that it will be clear sailing from now on in either the truck or tractor business; every man engaged in either one of these lines knows better. It seems safe to state, however, that there has been a very definite turn for the better in both lines and a rather steady improvement is almost certain to take place in the future. With this improved condition in prospect it would seem that truck dealers should give consideration to the taking on of a line of tractors, if they have not already done so. The business in both trucks and tractors the past season has been very satisfactory in the case of a great many dealers who have made an earnest and conscientious effort to get the business. Those who have not made such efforts have a different story to tell, but the facts speak for themselves in nearly every case. The man who expects to simply take the agency for a good truck or a good tractor, or both, and wait for business to come to him, is doomed to disappointment. The returning tide of prosperity is not yet strong enough to permit much progress while resting on one's oars. The tractor and truck dealers will find that their business bark will require some rowing in order to get them safely into the current which will carry them on to the desired goal. Right now real efforts are required; a little later on it may be safe to relax a little and allow the current to do its share.



Road Work Continues to Demand Modern Paving Equipment on a Large Scale

The paving company contracted on the above job employs a central mixing plant for the concrete, hauling the wet batch to the roadbed in dump trucks. Twin City three and a half ton trucks equipped with Lee hopper type bodies of a size to haul two yards of wet mixed aggregate, which is the capacity of the mixer, are used. To take care of narrow width road work, the wheelbases of these trucks have been reduced to 120 in. They are equipped with solid tires in front and 12-in. giant pneumatics in the rear.

The Electric in the Baking Industry

The Figures Compiled in This Article for Purposes of Comparison Show Enormous Savings in Electric Over Horse-Drawn Equipment. Estimates Prepared From Operation Costs of a Large Bakery Show a Saving of $24,000 in One Year

By C. P. SHATTUCK

FLEET or volume sales in motor highway transportation are highly desirable both from the factory and dealer standpoint. They are prized for two reasons: First, it means a real big profit; Second, the prestige attained is valuable in approaching other large prospects. But fleet sales require a careful analysis and an equally able presentation of cost figures. If the prospect is a user of horse drawn equipment the figures must deal carefully with this form of transportation, particularly if the business is one in which the horse is employed on short hauls and frequent stops.

The bread baking industry is one of this type. The large baking companies have stuck to horses in the past, more perhaps, because of custom and in the belief that the short haul and frequent stop were factors favoring the horse. Consequently the truck dealer approaching a baking concern using horses is confronted with a hard nut to crack.

Some time ago a dealer handling the Ward line of electrics in a certain city went after a baking company, determined to make an opening wedge. Now this concern operated 43 morning routes, also 34 so-called "hot bread" routes. It was a mixed fleet of vehicles; 23 of the morning routes were served by horses and 19 by gasoline cars. There were 24 horses employed on the hot bread routes and 10 gasoline cars.

HORSES AND WAGONS
Yearly Cost of Operation, Etc.*

Feed	$21,771.70
Repairs, wagons	25,557.16
Repairs, harness	3,268.67
Shoeing and veterinary	5,350.66
Interest on Investment†	
Buildings	742.30
Land	56.58
Horses	379.05
Wagons	573.00
Equipment	54.86
Harness	92.85
Depreciation	
Stable, @ 5 per cent	1,237.17
Horses, @ 20 per cent	2,527.00
Wagons, @ 10 per cent	1,910.02
Harness, @ 20 per cent	619.08
Equipment, @ 10 per cent	182.88
Insurance, buildings, wagons, horses, equipment, etc.	44.21
Theft	287.04
Taxes, land, buildings, etc.	551.46
Salaries, drivers, etc.	11,276.03
Total	$76,481.72

*Lubrication, cleaning, painting, kerosene for lamps, etc., included in repairs and upkeep.
†Interest figured at 3 per cent on total.

TRUCKS

Current	$8,358.00
Lubrication and cleaning	817.20
*Battery expense	12,482.78
Repairs and parts, chassis	2,482.81
Repairs and painting, body	4,080.00
Tires, @ 10,000 miles	3,249.15
Interest on Investment, 3 Per Cent	
Buildings	371.15
Land	28.29
Vehicles, less tires and batteries	3,073.87
Equipment	588.00
Depreciation	
Vehicle, @ 10 per cent	7,684.67
Equipment, @ 5 per cent	980.00
Insurance, fire	40.00
Insurance, liability	574.08
Taxes	600.00
License fees	189.00
Salaries, drivers, garage, etc.	6,900.00
Total	$76,481.72

*Includes depreciation, interest, solution, repairs and water.

The dealer sold the company on the plan of a demonstration of the electric, using those types of trucks and bodies best adapted to the work. The trucks were sent over the various routes with the horse driver and every effort made to duplicate the performance insofar as loads, stops, mileages, etc., were concerned. An engineer from the Ward Motor Vehicle Company checked the performance, co-operating with the dealer, which is a dealer policy of the Ward company.

Table number 1 gives the loads, total daily miles and total daily stops and the unit employed. It will be noted that of the unit in use 24 were horses and 19 trucks. In the final analysis it was recommended that all of the gasoline trucks be retained except three, these being of a popular make of passenger car chassis equipped with a commercial body. With the hot bread routes, where the gasoline equipment was similar, it was recommended that eight of the ten be replaced with electrics. Table No. 2 shows the analysis.

On the morning bread routes, the horse wagons left the bakery about from 2.30 to 4.30 in the morning and generally made one trip a day. The average cubical contents of these wagons is 183,549 cu. in., whereas that of the truck body is 203,185 cu. in.

On the hot bread routes the wagons left the bakery about 10 in the morning, returning between 12.30 and 2.30, making another trip in the afternoon. The average cubical content of the body is 152,884 cu. in., where that of the electric, another model and different from that employed on the morning routes, is 162,183 cu. in.

It was found that the trucks returned earlier. Also they had a greater carrying capacity. Records were maintained of current consumption, ampere hours, and data compiled dealing with condition of roads, grades, etc.

It was recommended that 27 electrics be used on the morning routes as follows: 23 trucks to replace 23 single horses, one a double horse route and three the gasoline cars. On the hot bread routes it was recommended that 23 trucks replace 23 single teams, one a double horse route and the balance, 5 gasoline cars, with electrics.

Comparative costs of the horse drawn and electric equipment was figured on a yearly basis, the former comprising 59 horses and 54 wagons with 60 sets of harness, and 63 trucks. The investment on horses was given as $12,635; wagons, $19,100; harness, $3,095.40; land, $1,885.95;

TABLE No. 1

Morning Routes

Routes	Load	Total Daily Miles	Total Number Stops	Present Unit	Recommended
1.....	633	22.2	133	1 Horse	Electric
2.....	790	22.4	152	1 Horse	Electric
3.....	...	40.0	...	Gasoline	Gasoline
4.....	730	21.7	110	1 Horse	Electric
5.....	...	50.0	...	Gasoline	Gasoline
6.....	760	22.5	149	1 Horse	Electric
7.....	962	23.8	133	Gasoline	Electric
8.....	855	21.3	153	1 Horse	Electric
9.....	...	65.0	153	Gasoline	Gasoline
10.....	1038	25.00	147	1 Horse	Electric
11.....	920	13.9	63	2 Horse	Electric
12.....	1127	15.4	118	1 Horse	Electric
13.....	...	70.00	...	Gasoline	Gasoline
14.....	...	80.00	...	Gasoline	Gasoline
15.....	...	125.00	...	Gasoline	Gasoline
16.....	960	26.90	158	1 Horse	Electric
17.....	...	33.00	...	Gasoline	Gasoline
18.....	930	23.4	172	1 Horse	Electric
19.....	...	80.00	...	Gasoline	Gasoline
20.....	933	18.20	144	1 Horse	Electric
21.....	1019	18.50	103	1 Horse	Electric
22.....	1106	26.10	151	1 Horse	Electric
23.....	1015	21.20	179	1 Horse	Electric
24.....	...	35.00	...	Gasoline	Gasoline
25.....	1007	15.30	107	1 Horse	Electric
26.....	815	16.00	105	1 Horse	Electric
27.....	...	45.00	...	Gasoline	Gasoline
28.....	...	50.00	...	Gasoline	Gasoline
29.....	...	70.00	...	Gasoline	Gasoline
30.....	...	30.00	...	Gasoline	Gasoline
31.....	988	15.10	97	1 Horse	Electric
32.....	...	.....	...	Gasoline	Gasoline
33.....	...	.....	...	Gasoline	Gasoline
34.....	1000	22.50	198	1 Horse	Electric
35.....	933	18.70	129	1 Horse	Electric
36.....	950	17.60	107	1 Horse	Electric
37.....	1194	14.40	97	1 Horse	Electric
38.....	650	19.50	54	1 Horse	Electric
39.....	...	.....	...	Gasoline	Gasoline
40.....	911	14.93	121	1 Horse	Electric
41.....	...	80.00	...	Gasoline	Gasoline
42.....	889	25.00	148	1 Horse	Electric
43.....	...	40.00	...	Gasoline	Gasoline

TABLE No. 2

Hot Bread Routes

Routes	Load	Total Daily Miles	Total Number Stops	Present Unit	Recommended
1.....	493	12.10	88	1 Horse	Electric
2.....	613	15.20	88	1 Horse	Electric
3.....	589	14.10	71	1 Horse	Electric
4.....	460	18.90	74	1 Horse	Electric
5.....	625	10.50	78	1 Horse	Electric
6.....	782	10.90	83	1 Horse	Electric
7.....	485	16.60	68	1 Horse	Electric
8.....	613	16.30	104	1 Horse	Electric
9.....	745	26.60	87	Gasoline	Electric
10.....	...	15.40	55	1 Horse	Electric
11.....	354	18.50	54	Gasoline	Electric
12.....	1095	17.00	83	1 Horse	Electric
13.....	565	9.10	60	1 Horse	Electric
14.....	...	30.00	...	Gasoline	Gasoline
15.....	...	35.00	...	Gasoline	Gasoline
16.....	395	13.00	69	1 Horse	Electric
17.....	695	7.30	40	1 Horse	Electric
18.....	880	9.00	64	1 Horse	Electric
19.....	492	17.80	98	1 Horse	Electric
20.....	971	8.30	64	1 Horse	Electric
21.....	720	17.30	70	Gasoline	Electric
22.....	...	9.90	47	1 Horse	Electric
23.....	660	23.30	87	Gasoline	Electric
24.....	730	17.20	80	1 Horse	Electric
25.....	720	8.90	57	1 Horse	Electric
26.....	545	23.80	80	Gasoline	Electric
27.....	1000	14.60	57	Gasoline	Electric
28.....	949	15.20	76	2 Horse	Electric
29.....	...	11.40	45	1 Horse	Electric
30.....	...	13.60	69	1 Horse	Electric
31.....	...	12.80	48	1 Horse	Electric
32.....	...	12.10	76	1 Horse	Electric
33.....	...	24.60	80	Gasoline	Electric
34.....	...	26.30	82	Gasoline	Electric

TABLE No. 3

Morning Routes

Routes	Load	Total Daily Miles	Total Number Stops	Present Unit	Recommended
1.....	...	33.00	...	Gasoline	Gasoline
2.....	...	32.00	...	Gasoline	Gasoline
3.....	788	14.60	82	1 Horse	Electric
4.....	745	16.50	136	1 Horse	Electric
5.....	850	24.30	200	1 Horse	Electric
6.....	960	17.10	75	2 Horse	Electric
7.....	747	21.50	123	1 Horse	Electric
8.....	...	54.00	...	Gasoline	Gasoline
9.....	559	15.40	64	1 Horse	Electric
10.....	777	15.70	47	1 Horse	Electric
11.....	638	16.60	145	1 Horse	Electric
12.....	775	26.00	188	1 Horse	Electric
13.....	750	21.50	143	1 Horse	Electric
14.....	694	27.20	138	1 Horse	Electric
15.....	879	26.00	152	1 Horse	Electric
16.....	600	18.40	124	1 Horse	Electric

TABLE No. 4

Hot Bread Routes

Routes	Load	Total Daily Miles	Total Number Stops	Present Unit	Recommended
1.....	503	19.50	109	1 Horse	Electric
2.....	521	16.70	103	1 Horse	Electric
3.....	908	14.00	87	1 Horse	Electric
4.....	439	17.40	103	1 Horse	Electric
5.....	514	18.40	97	1 Horse	Electric
6.....	...	24.00	...	Gasoline	Electric
7.....	...	24.00	...	Gasoline	Electric
8.....	400	20.80	135	1 Horse	Electric
9.....	...	39.00	...	Gasoline	Electric
10.....	...	38.00	...	Gasoline	Electric
11.....	...	21.00	...	Gasoline	Electric
12.....	447	14.80	140	1 Horse	Electric

stables, $24,743.41, and equipment, etc., $1,828.77. The investment in trucks was given at $166,020, alterations to complete the garage, $4,000; charging apparatus, $12,000, and wiring, $3,600.

The yearly cost of operation of the two types of transportation is given in detail in an accompanying table. That for the horse drawn equipment is $76,481.72, while for the electric trucks is $52,490, a yearly estimated saving of $24,000. It is the practice of the electric vehicle makers to estimate the depreciation of their trucks at 10 per cent or the life of the vehicle at 10 years, therefore, they point out that comparative costs, as in the installation just described, should be on a 10 year basis which would, in the case cited, amount to $524,900. It is also pointed out that the saving in three years would pay for the investment in the trucks, alteration or garage, charging apparatus and wiring.

The analysis proved so satisfactory to the baking company that the order was placed for the trucks and a repeat followed for a subsidiary of the company, the details of the routes and equipment being shown in table number 3 and 4. The gross volume of business was over $200,000 and the profits are obvious. In this case the dealer did not receive the full commission as the factory engineering department was called in and the dealer was aided in making the sale. But in such cases it is the dealer policy of the Ward company to pay the dealer 50 per cent of the commission in cash and 50 in advertising so that he really receives 100 per cent of his commission.

Why Brand Oil is Preferred by the User

Branding is a Merchandising Essential That Satisfies Three Different Viewpoints, the Manufacturer, the Dealer and the Ultimate Consumer. Experience has Definitely Proved Branding to be Especially Advantageous to the Dealer, Both in Buying and Selling

By C. H. BRISTOL, Manager Motor Oil Department, Sun Company, Philadelphia

THERE are two methods by which merchandise of any sort can be classified—by analysis or by brand. Very large purchasers, like government departments, buy nearly all their supplies to specification. Individuals buy nearly everything they use to brand.

Fifty years ago the variety of merchandise in common use was very small compared with today. Just to take an example, in 1870 soap was soap and there were just a very few fancy brands of toilet soaps having a limited sale. At the present time an ordinary individual would find it almost impossible to buy soap without being forced to choose his brand, and this is just as true of the cheapest varieties of coarse soaps as it is of the finest toilet preparations.

Just the same thing is true of tea, coffee, clothes, furniture, in fact almost everything which can be purchased for household use. Of course, there is a reason for everything, and this habit of branding would not have grown unless it had been proved to be to the benefit of the ultimate consumer. In a primitive community an intelligent member can easily be a judge of every article which he or she requires. For any man to be able to judge the quality of even ten per cent of the things he uses daily would be impossible.

When a manufacturer sells to a government his shipments must all conform to government specifications. When he sells to the general public his goods must be of the standard of quality which has come, by years of use, to be associated with his brand. Just as the Stars and Stripes all the world over are associated with definite standards of thought and action, so does a well known brand describe the goods sold under it in the general terms of description which the average purchaser desires.

Satisfies Three Factors

Nothing in merchandising persists year after year unless there is adequate reason for it, and at least three different viewpoints must be satisfied if any merchandising practice is to become standardized, these being the viewpoints of the manufacturer, the dealer and the ultimate consumer. No custom can persist which is not advantageous to all three, but of the three the viewpoint of the dealer is probably the most influential. Branding, therefore, has been definitely proved to be an advantage to the dealer, both in buying and in selling.

Coming back to the example of soap the question may be asked, "Why is it that unbranded soap is almost unobtainable, since the maintaining of a brand necessitates the use of special packages and advertising, and must necessarily cost money, so that a manufacturer selling branded and advertised soap should be able to cut his price slightly if he returned to the ancient method of selling." The only possible answer is that in course of years both dealer and consumer discovered that the assurance of quality given by brand was worth its cost, which is equivalent to saying that the cost of maintaining a brand is trivial.

Brands Establish Confidence

Twenty years ago the percentage of the inhabitants of the United States who bought oil was extremely small, and most of the purchasers bought more or less to specification as do government departments, railroads and other very large consumers today. Until the coming of the automobile there had been no retailing of oil worth mentioning, but despite these facts the oil business was already a very large business indeed. This meant that with the growth of automobile demand oil was readily obtainable, but the purchaser had no basis whatever on which to judge the suitability of lubricants offered for his use. This meant he was compelled to rely on the word of the dealer, and the latter was compelled to take the word of the jobber. Still worse, in the early years neither the jobber nor the refiner, from whom he in turn purchased, had much data to guide him in selecting the proper oil. In a situation like this it is difficult to place responsibility on anyone, so naturally the consumer welcomed branded oils when they appeared, because the brands pinned responsibility on some one and because, having found a suitable brand, the consumer could rely upon obtaining the same satisfaction from oil bearing that brand wherever he might buy it.

Now in the beginning of the automobile business, with everything new, the establishing of brands was a serious undertaking, and the use of automobiles increased more rapidly than the merchandising organization necessary to take care of it. Introducing a new article to an established trade is one thing, and introducing a new form of an old article to a new trade is quite another. A very large percentage of the dealers in the automobile field had no previous experience in merchandising, and in many cases were too impatient to give any study on the matter of their business. Consequently, in the automobile field many kinds of unsound methods have been tried. Also, without a doubt, the automobile trade has contained and still contains many thousands of retailers who are opportunists and have no intention of building up permanent businesses.

No man in his senses places any reliance upon the goods sold by sidewalk peddlers, who are here today and gone tomorrow, but if his butcher sends him a tough steak he considers that it is his right to raise bitter complaint. Consequently, all that the peddler is interested in is some article which will move quickly, while the butcher, who cannot create any unusual variety in what he sells, has to maintain his custom by keeping up the quality of what he sells.

Governs Oil as Well

The automobile user has always recognized that there was difference between different makes of machines, different kinds of tires, different sorts of sparkplugs, etc., because he can readily see that these things have to be made, and therefore the quality will vary with the care taken in the selection of materials and in the actual manufacture. On the other hand, it is not so obvious that oil is just as much manufactured as a tire, but selecting the proper crude and treating it so as to produce the best lubricant is quite as large an undertaking as is the selection and curing of rubber. Probably this was partly due to the fact that gasoline was always bulk purchased and comparatively little choice could be exercised in its purchase. In this connection, however, at least one instance can be quoted showing that the ordinary motor-car user does believe that there is a difference in fuels. In 1916 the City of Detroit decided to pass an ordinance requiring all gasoline sold within the city limits to be up to a certain standard specification, which standard was worked out with the assistance of the oil companies and the Bureau

of Mines. In course of investigating the situation, previous to writing the specification, it was observed that many filling stations in Detroit were selling two grades of gas. The one supposed to be the better sold for a cent to two cents per gallon more. It was proved that at a number of filling stations the sale of the higher priced gas greatly exceeded that of the other, while further investigation showed that both the high priced and the low priced pumps connected to the same underground tank. This means that the user will pay the price for what he believes to be a better article. He is gradually coming to realize that brands represent standards of quality in oils as well as in other things. If the price of, let us say, a 32 x 4 cord tire of any of the ten leading makes is $30, no man readily believes that in buying a competitive tire for $20 that he is getting as good an article, because the reputation of these leading ten manufacturers is positive proof that they are giving the best article they can at the best price they can.

The tire industry is fortunate in that it is impossible for an unscrupulous retailer to purchase inferior shoes and put upon them the brand of a reputable manufacturer. The oil refiner is in a much more difficult position, but the mere fact that substitution of a cheap inferior oil for an established brand of lubricant does pay the unscrupulous filling station is a convincing proof of the instinctive readiness of the public to place their faith in the branded products of reputable refiners.

The view is sometimes expressed that the oil companies see in the automobile field the opportunity for obtaining excessive profits by selling under a brand the same oil they would have been willing to sell for very much less money in tankcar lots, but this is the exact opposite of the truth, as the demand for the brand originating with the consumer, just as it did in the case of all other commodities. Without any doubt history is in process of repeating itself, and the advantage of the brand to purchaser, retailer and consumer will be established as definitely for oil as it has been for tires, for soap, or for chewing-gum.

Haulers Get Together at Annual Convention

Amalgamation Fails; Members in Discussion Showed the Need of Greater Efficiency Upon the Part of the Small Truck Owner

By A. V. COMINGS

IN spite of a determined final effort to put across a consolidation of the National Team and Motor Truck Owners' Assn. and the National Association of Commercial Haulers at the annual convention of the former organization at Cedar Point, Ohio, August 7-9, no action was taken to consummate this amalgamation, so long desired by some members of both bodies. Committees from each association tried during three days to arrange plans for consolidation, but to no purpose.

The convention was well attended, and the program was an excellent one in many ways. An effort had been made to bring about a debate between prominent men representing the horse interests of this country and the motor truck manufacturers, but the debate was not arranged. The horse was ably championed in an address by Isaac Goldberg, of New York, but the majority of the program was given over to various phases of motor truck haulage, and the future of the transfer and storage business.

One thing the members brought up again and again, was that the small truck owner, the transfer man and truck man who has no well organized and efficient business getting methods, is bound to pass out of the picture unless he mends his ways. Every year the larger trucking companies are taking more and more of the business through their more efficient methods of getting business and handling it after they have landed the contracts. Much stress was laid, in various papers, on the need for the more efficient use of trucks once the investment is made in them.

E. E. LaSchum, general superintendent of the American Railway Express Co., of New York, read an interesting paper on the experience his company has had with electric trucks, and stated that they were an invaluable adjunct to the gasoline truck in handling various kinds of transfer business.

Joseph X. Galvin, of Chicago, was re-elected president, and the other new officers elected were as follows:

Vice presidents, E. Foster Moreton, of Detroit, and Joseph W. Glenn, of Buffalo; Treasurer, W. J. McDevitt, of St. Louis; Directors, Joseph Cavanaugh, Philadelphia; F. B. Giles, Chicago; Frank S. Gottry, William T. Gund, St. Louis; Paul J. Herbert, Youngstown; Thomas O'Brien, Detroit; Harry Martin, D. T. Hobbs, Kansas City, Mo.

F. L. Henk, of Detroit, who expressed a wish to retire from the secretaryship to devote all his time to the Detroit Transportation Association, consented to act in that capacity until his successor could be named.

During the convention the General Motors Truck Company, the Detroit Trailer Company, the Martin-Parry Company and the Clydesdale Motor Truck Company had exhibits for the inspection of the delegates.

Jos. X. Galvin, President
Chicago

F. L. Henk, Secretary
Detroit

News of the Trade in Brief

Timken Brings Out 400,000 Share Block

A block of 400,000 shares of no par value, Timken Roller Bearing Co. stock, which number constitutes a third of the outstanding stock was brought out recently at $30 a share. It is explained that the stock is not placed on the market to cover any refinancing but is a personal matter between the Timken family and the bankers. The offering is made through a New York banking group.

No change has taken place in the board of directors. The business will be continued in the future just as in the past and the stock offering will make no difference in its management and policies.

With the stock offering comes the publication of the company's financial statement which shows the concern to be in excellent condition. The average net profits since 1915 after taxes had been deducted are $3,519,201. Net profits after taxes and depreciation, and available for dividends are estimated at over $6,000,000.

It must be borne in mind that the Timken Roller Bearing Co., has nothing to do with the Timken Detroit Axle Co., except that the latter is a customer of the former. The bearing company owns plants at Canton and Columbus, O., and Walkerville, Canada.

Signal Reduces

The Signal Truck Corp., Detroit, has announced a reduction on all its truck models. New prices are as follows: Models NF 1-ton, $1450; H, 1½-ton, $1950; J, 2½-ton, $2375; M, 3½-ton, $3175; R, 5-ton, $3900. All models except NF are equipped with solid tires. Model NF has pneumatics.

Electric Truck Parade to Show Diversified Uses

With trucks entered by every electric vehicle dealer in the Metropolitan territory, and with more than twenty different users promising to participate, the success of the electric vehicle parade scheduled for Electrical Show Week in New York City, in October is assured. It is expected that more than one hundred vehicles will be in line.

The parade will be held on Tuesday, October 10. The route has not yet been decided upon, but this detail will be settled with the issuing of the permit by the Police Department. Arrangements are in charge of Charles R. Skinner, Jr., manager of the Automobile Bureau of the New York Edison Company, to whom entries may be sent.

Coming Events

SHOWS

September 15 to 19, 1922—Sioux City, Iowa. Automobile Exhibit in connection with Interstate Fair, auspices of Motor Trades Bureau. Interstate Fair Grounds, Milton E. Duggan, Mgr.

September 23 to 30, 1922—Memphis, Tenn. Annual Automobile Show at the Tri-State Fair Grounds. Auspices of Memphis Automobile Dealers' Assn. H. W. Osoinach, Sec.

October 2 to 7, 1922—New York, N. Y. First annual National Fire Prevention Exposition at 22nd Regt. Armory. Exhibition of fire fighting apparatus. A. E. MacKinnon, Mgr., 405 Lexington Ave., New York City.

October 3 to 7, 1922—Brockton, Mass. Automobile exhibit at the 49th annual Brockton Fair sanctioned by Boston Automobile Dealers' Assn. Passenger cars, trucks, tractors and accessories.

October 7 to 14, 1922—New York, N. Y. Electrical Exhibit at Grand Central Palace. Electric Automobiles. Norman Maul, 130 East 15th St., New York City.

October 9 to 16, 1922—Little Rock, Ark. Sixth annual automobile show, at State Fair Grounds, auspices Little Rock Automobile Dealers' Assn. Passenger cars, trucks, and accessories. A. W. Parke, Mgr., P. O. Box 699, Little Rock.

October 16 to 20, 1922—Atlantic City, N. J. Accessory Show and Convention of the Automobile Accessories Branch of the National Hardware Assn. of the U. S. at the Ambassador. T. James Fernley, Sec., 505 Arch St., Philadelphia, Pa.

October 16 to 21, 1922—Jackson, Miss. Automobile exhibit by local dealers at Mississippi State Fair. Passenger cars, trucks, tractors and accessories. Mabel L. Stire, Secy.

October 17 to 21, 1922—Pomona, Cal. Automobile and accessory show of the Citrus Belt Auto Trade Assn., Los Angeles County Fair Grounds.

November 13 to 18, 1922—Chicago, Ill. Annual Exhibit and Convention of the Automotive Equipment Assn. Coliseum.

November 22 to 29, 1922—Cincinnati, Ohio. Second annual automobile, accessory and radio show, Music Hall (75,000 sq. ft.), auspices Cincinnati Automotive Trades Assn. Passenger cars, trucks, tractors, accessories and radio equipment. Jno. J. Behle, Mgr., 809 Gerke Bldg.

January 6 to 12, 1923—New York, N. Y. Annual Automobile Show of the N. A. C. C., in Grand Central Palace. Passenger Cars and Accessories. S. A. Miles, Mgr., care of N A. C. C., 46th St. and Madison Ave

January 8 to 13, 1923—New York, N. Y. 2nd annual body builders' show at the 12th Regiment Armory, auspices of the Automobile Body Builders' Association.

January 13 to 22, 1923—Oakland, Calif. Fifth annual show, Motor Car Dealers' Division of Alameda County Auto Trade Assn., Civic Auditorium. Passenger cars, trucks, tractors and accessories. Robert W. Martland, Mgr., 407 Pacific Bldg.

January 27 to February 3, 1923—Chicago, Ill. Annual Automobile Show of the N. A. C. C., in the Coliseum and 1st Regt. Armory, S. A. Miles, Mgr., care of N. A. C. C., 46th St. and Madison Ave., New York City.

February, 1923—Charlotte, N. C. Annual automobile show of the Charlotte Automotive Trade Assn., Carolinas Exposition Bldg.

February 3 to 10, 1923—Minneapolis, Minn. 16th annual automobile show, auspices Minneapolis Automobile Trade Assn. Passenger cars, trucks, tractors, accessories. W. R. Wilmot, Mgr., 709 Andrus Bldg.

February 12 to 19, 1923—Portland, Ore. 14th annual show of Automobile Dealers' Association of Portland, Inc. Municipal Auditorium (36,000 sq. ft.) Passenger cars, trucks, tractors and accessories. Ralph J. Staehli, 424 Henry Bldg.

February 17 to 24, 1923—St. Louis, Mo. 16th annual show auspices of St. Louis Automobile Dealers' Assn. Passenger cars, trucks and accessories. Robert E. Lee, Mgr., 3124 Locust St.

February 17 to 24, 1923—Akron, Ohio. 9th annual show of the Akron Automobile Exhibition Co., Central Garage (45,000 sq ft.) Passenger cars, trucks, tractors, accessories. E. T. Jones, Mgr., 1091 W. Exchange.

February 28 to March 3, 1923—Syracuse, N. Y. 15th annual show at State Armory (43,000 sq. ft.) Passenger cars, trucks and accessories. Howard H. Smith, Mgr., 701 Eckel Bldg.

March 10 to 17, 1923—Boston, Mass. Annual show at the Mechanics' Bldg., auspices of Boston Automobile Dealers' Assn. Passenger cars, trucks and accessories. Chester I. Campbell, Mgr.

CONVENTIONS

Atlantic City, N. J., October 17 to 20, 1922—28th Annual Convention of the National Hardware Association of the United States. Automobile Accessories Branch exhibit and meeting at the Ambassador. T. James Fernley, Secy., 505 Arch St., Philadelphia.

Buffalo, N. Y., September 13 to 15, 1922—Sixth Annual Convention of the Motor and Accessory Manufacturers' Association, Hotel Lafayette, M. L. Heminway, Gen. Mgr., 33 West 42nd St., New York City.

Chicago, Ill., October 18 to 20, 1922—Convenof National Association Farm Equipment Manufacturers.

Clarksburg, W. Va., October 10, 1922—Convention of the West Virginia Automobile Dealers' Association, Geo. M. Ford, Secretary, 1407 Market St., Wheeling.

Des Moines, Iowa, November 9 to 10, 1922. Convention of Iowa Automotive Merchants Association, Inc., A. J. Knapp, Secy., 3rd floor Shops Bldg., Des Moines.

Detroit, Mich., October 26 and 27, 1922—Automotive production meeting of the Society of Automotive Engineers.

Grand Rapids, Mich., November 21 to 23, 1922—Annual Meet of the Michigan State Good Roads Assn.

Hartford, Conn., October 10, 1922—Convention of the State Automotive Dealers' Assn., of Conn., Inc., at Hotel Bond, Arthur Fifoot, Secy.

Providence, R. I., April 5, 1923. Annual election of officers Rhode Island Automobile Dealers' Assn. Ralph P. Lord, Secy., 617 Industrial Trust Bldg., Providence.

Quincy, Ill., March 3, 1923—Fourth annual convention of the Illinois Automotive Trade Assn., F. C. Zillman, Mgr., 212 Lehmann Bldg., Peoria, Ill.

Salt Lake City, Utah, February, 1923. Annual meeting of Intermountain Automotive Trades Association, Carl L. Snow, Mgr., Salt Lake City.

Santa Barbara, Calif., October, 1922—Annual General Convention of the California Automobile Trade Assn. Robert W. Martland, Sec., Pacific Bldg., Oakland, Calif.

Toledo, Ohio, December 6 to 8, 1922. Sixth annual convention Ohio Automotive Trade Association, at LaSalle-Koch Co., assembly rooms, E. J. Shover, Mgr., 404 Central National Bank Bldg.

Topeka, Kansas, January 15, 1923. Convention of Automobile Trade Association of Kansas, Phil. E. Zimmerman, Topeka.

Washington, D. C., October 26 to 28, 1922—Second national conference for study of highway engineering and highway transport education, auspices Highway Education Board.

FOREIGN EVENTS

Berlin, Germany, September 25 to October 3, 1922—Automobile show at the Kaiserdamn Hall, direction German Automobile Manufacturers' Association.

Brussels, Belgium, November 10 to December 19, 1922—Automobile Show, Palais de la Cinquantenaire.

Brussels, Belgium, January 13 to 24, 1923—16th annual Automobile and Cycle Exposition at Palais du Cinquantenaire Passenger cars, trucks, tractors, accessories, etc.

Copenhagen, Denmark, September 16 to October 1, 1922—Exhibition of firefighting and prevention appliances. Address Danish Foreign Offices at Washington.

London, England, October 12 to 23, 1922—International Commercial Vehicle Exhibition at Olympia.

Paris, France, October 4 to 15, 1922—Annual Automobile Show at Grand Palais.

Rio de Janeiro, Brazil, September 7 to November 15, 1922—Automobile Show during International Exhibition.

The Hague, Netherlands, September 15 to 20, 1922—Annual Automobile Show.

Bearings Service Co. to be Dissolved

The Bearings Service Co., as an active organization, will be dissolved December 31, 1922, according to Alfred K. Hebner, president and general manager.

The Bearings Service Co. was incorporated June 26, 1916, and will have completed by December 31, 1922, six and one-half years of existence, being the concern acting through 32 direct branches and approximately 1,000 distributors as the service department of the Timken Roller Bearing Co., the Hyatt Roller Bearing Co., and the New Departure Manufacturing Co. for the service distribution of Timken, Hyatt and New Departure bearings.

Mr. Hebner issued the following statement:

"Although the same mutually friendly attitude exists among the manufacturing principals through whose efforts the Bearings Service Co. was brought into existence, with automotive service activities and policies becoming more and more important in the industry as they have during the past several years there has been a growing mutual realization between the Timken Roller Bearing Co. and the General Motors Corp. whose interests have been represented in the Bearings Service Co., that the best ultimate goal would be secured by each through a separation of their bearings service program.

"To this end on and after October 1, 1922, the servicing of Hyatt and New Departure bearings, the manufacturers of which are units of the General Motors Corp., will be handled by the United Motors Service, Inc., and a new company to be known as the Timken Roller Bearing Sales & Service Co. will care for the servicing of Timken bearings.

"Until January 1, 1923, when the Timken Roller Bearing Sales & Service Co., will be in operation, the Bearings Service Co., will continue the servicing of Timken bearings as heretofore at all its 32 direct branches located in the following cities: Atlanta, Boston, Chicago, Detroit, Los Angeles, Minneapolis, New York, San Francisco, Seattle, Kansas City, Dallas, Cleveland, Denver, Indianapolis, Birmingham, Richmond, Philadelphia, St. Louis, New Orleans, Pittsburgh, Omaha, Portland, Toronto, Winnipeg, Brooklyn, Fresno, Milwaukee, Salt Lake City, Baltimore, Buffalo, Newark, Oklahoma City.

"In addition in any of these cities where the United Motors Service, Inc., does not have branches the Bearings Service Company's branches up to January 1, 1923, will sell for service Hyatt and New Departure bearings.

"To indicate the continued mutually friendly attitude in service affairs between the manufacturers of Timken, Hyatt and New Departure bearings, the United Motors Service, Inc., will appoint as service distributors of Hyatt and New Departure bearings, the direct branches of the Timken Roller Bearing Sales & Service Co., in cities where the United Motors Service, Inc., has no direct branches and conversely the Timken Roller Bearing Sales & Service Co. will appoint direct branches of the United Motors Service, Inc., as its service distributors for Timken bearings in such cases.

"These arrangements will result in the public obtaining just as good if not better, service on all these three bearing lines, Hyatt, Timken and New Departure, than has been available in the past through the Bearings Service Co.

New Selden-Atlas Branches Opened in Chicago and York

The excellent building and facilities of the Hartnett-Stewart Motor Co., 1819-21 South State St., Chicago, Ill., have been taken over by the Selden Truck Corporation, Rochester, N. Y., and will be operated as a direct factory branch. The branch will be known as the Selden Sales and Service Co., with James W. Stewart as branch manager.

The Hartnett-Stewart Co. has represented the Selden Truck Corporation in Chicago since the first of the year. The Selden Sales & Service Co. will be a combination of the Atlas Truck Corporation and the Selden Truck Corporation branches. J. Ira Hartnett will remain as Selden sales manager, and Randall H. Crouse will be the Atlas sales manager.

At Philadelphia, Pa., the Atlas Truck Corporation branch has been united with the Selden branch to operate as the Selden Sales & Service Co., handling both Atlas and Selden trucks. George H. Covert will remain as branch manager in charge of Selden Sales. H. A. Woodruff will continue in charge of Atlas Sales.

At York, Pa., the home of the Atlas truck, another branch operated as the Selden-Atlas Sales & Service Co., has been opened at 127 South Duke St., with H. M. Heiges as manager. Mr. Heiges has been in charge of Atlas sales at York, and a proved success at this point.

The Industrial Motors Corp., of which both the Selden Corp. and Atlas Corp. are divisions, has given the sales of Atlas trucks to the Selden organization with H. T. Boulden as sales director. It is thought that this policy of combined branches will be carried out in practically all the larger cities. The branch will then sell and service both Atlas speed trucks and Selden medium and heavy-duty line.

At the present time nine branches are in operation. The branches operating as Selden Sales & Service Co. are now at New York City, New Haven, Conn.; Philadelphia, Pa.; York, Pa.; Cleveland, Ohio; Charlotte, N. C.; Chicago, Ill., and Tulsa, Okla. The branch at Atlanta, Ga., operates as the Selden Service Co.

Shunk Company Plans Greater Distribution

The Shunk Manufacturing Co., Bucyrus, O., manufacturer of Eureka springs and bumpers, have secured the H. L. Rackliff Co., automotive marketing counselors of Cleveland and New York to supervise and assist them in their plan of distribution.

The Shunk Mfg. Co. is one of the oldest in the industry and rapid strides are being made in enlarging their distribution.

Parts Export Trade Has Been Good

The export trade among a number of the part manufacturers has been exceptionally good. One of those showing a decided increase over the first of the year was the Wisconsin Parts Co., manufacturer of Wisconsin axles, at Oshkosh, Wis. In the month of May nearly 25 per cent of the shipments went to foreign countries. June, July and August also indicated increases. The company's European representative reports improvement in truck sales resulting in several manufacturers laying plans for extensive production.

On the type of model desired the company reports as follows: "The demand from foreign countries is fairly well divided between Wisconsin worm drive and the double reduction models, the former being used on trucks up to 2 and 3 tons capacity, and the latter on heavy-duty types. In England four of the largest truck builders follow this practice exclusively, and although a number of other manufacturers have retained the chain drive until now, the tendency is toward the universal use of worm drive on light short hauls, with the double reduction used in the heavier sizes for long distance trucking.

"The special double reduction bus and trackless trolley types, which the company is now producing, have been well received by the trade. Two bus models are offered suitable for 18 to 25 and 35 passenger payloads, and in addition to providing special treads, low top clearance, and a wide range of gear reductions, the design permits many optional features.

"A special reverse gear rail car axle is being developed in collaboration with railway engineers, in which standard railway practice is modified to meet new conditions. Exhaustive road tests will be made in the near future."

Owen-Dyneto Takes Over the Dyneto Electric Corporation

Formal organization of the Owen-Dyneto Electric Corp., the new concern that will take over the assets of the Dyneto Electric Corp., of Syracuse, N. Y., has been effected. Directors of the company have been announced as follows: Ray M. Owen, New York City; Harry M. Ballard, Chicago; Hamilton Sanford, C. S. Estabrook and James D. Grant, Syracuse. Mr. Owen was elected president, Mr. Ballard and Mr. Grant, vice-presidents; Mr. Estabrook, secretary; and Mr. Grant, treasurer.

It will be remembered that the Dyneto Electric Corp., manufacturer of generators and starting and lighting equipment was placed in the hands of receivers and sold by court order last year. Dyneto corporation has been in existence for eight years.

Under the management of Mr. Grant the factory has been producing generators and starting and lighting equipment for some time. Completion of the organization of the new company will mean resumption of production on a large scale before several months have transpired.

Plans Maturing for Second Annual Body Show

The Twelfth Regiment Armory will again house the National Automobile Body Builders show to be given for the second time at New York City, January 8 to 13, 1923, by the Automobile Body Builders Association and under the management of the Body Builders Exposition Co., Inc.

Exhibits this year will consist of all classes of passenger and commercial car bodies and the material and parts entering into their construction, trimming and finishing.

In view of the big production months of 1922 and the general rehabilitation in business conditions, the committee in charge anticipated a larger entry list and greater attendance than the first annual show held last year during New York passenger car show week.

Judges Are Named in Good Roads Contest

Names of judges appointed to award the four years' university scholarship offered in connection with the national goods roads essay contest were announced by the highway education board.

The judges are the Honorable Henry C. Wallace, Secretary of Agriculture; George Horace Lorimer, editor of the Saturday Evening Post; and Dr. John Grier Hibben, president of Princeton University. The judges accepted the responsibility for the award on the scholarship at the invitation of Dr. John J. Tigert, United States Commissioner of Education, who also is chairman of the Board.

The scholarship offered is given by H. S. Firestone, Akron, O., a member of the Highway Education Board. It is intended to defray tuition and all reasonable expenses of the student in college and is valued at not less than $4000. The successful student to be selected by the judges, may attend any college or university in the United States.

Excellent Response to Driver Campaign

Greater civility on the part of one million motor truck drivers in this country is anticipated from now on by reason of the excellent response that has been made to the educational campaign being carried on by the National Motor Truck Committee of the National Automobile Chamber of Commerce.

The pamphlet that is being used in the campaign, "Common Sense on the Highway," has already reached a circulation of 125,000 copies among truck manufacturers, dealers, and fleet operators. Requests for additional copies are being received daily from some of the largest truck users who comment in highly favorable terms and show a keen desire to stimulate interest among drivers. The pamphlet is illustrated by cartoonist Clare Briggs who shows in his inimitable style that courtesy is as cheap as the air and why drivers should move to the right to accommodate fast moving vehicles.

Gasoline Sold in Cities Now of a Better Grade

Results of the semi-annual motor gasoline survey, just concluded by the United States Bureau of Mines, indicate that the average gasoline sold in the country is of a better grade than has heretofore been the case. Laboratory tests of motor gasoline sold in New York, Washington, Pittsburgh, Chicago, New Orleans, St. Louis, Denver, Salt Lake City, San Francisco, and Bartlesville, Okla., during the month of July show that this year's gasoline is much more volatile than that sold two years ago.

A comparison of the average figures compiled by the Bureau of Mines during the past several years shows that motor gasoline is also becoming more uniform in character. The large seasonal change is disappearing, but "winter gasoline" still has a lower initial boiling point than "summer gasoline." This difference in volatility is made intentionally to facilitate starting the motor in cold weather. The end point shown in the present survey is slightly lower either than that of last winter or of the summer of 1921.

The average of the entire country considered as a whole, does not show much change from a year ago, but samples from individual cities show some distinct changes. Of 132 samples collected by the Bureau of Mines in the present survey, ten failed to meet Federal specifications as regards the initial boiling point of 140 degrees F., and sixty-one samples failed at the 90 per cent point (374 degrees F.)

The semi-annual motor gasoline survey just completed, is the sixth made by the Bureau of Mines. Detailed figures giving the results of the survey in each of the cities above named appear in Serial 2388, which may be obtained from the Bureau of Mines, Washington, D. C.

Trucks Save Farmers' Time

Ninety per cent of the farmers who responded to a survey made by the U. S. Department of Agriculture state that the factor of time-saving is the greatest advantage of trucks over horse-drawn vehicles. Even on short hauls the motor truck requires only about half the time needed to make the same trip by wagon.

July is Third Largest Production Month

Shipping reports to the National Automobile Chamber of Commerce, 90 per cent complete, indicate that July shipments from all factories will reach a total of 28,412 car loads, 28,022 driveaways and 6,855 boat.

On this basis it is estimated that 246,600 passenger cars and trucks were produced by all makers in July, exceeding July, 1921, by 39 per cent and the best previous July (in 1920) by 20 per cent. The decrease under June, of 14 per cent, is seasonal, and expected. This is a record for production in July and is the third largest single month's production in the history of the industry, being exceeded only by the two preceding months.

The factory shipping figures for all manufacturers are:

	Carloads		Driveaways		Boat	
	1922	1921	1922	1921	1922	1921
January	15,357	6,485	7,479	3,185	143	93
February	19,636	9,986	10,173	7,507	180	99
March	27,753	16,287	16,917	9,939	560	75
April	31,334	20,187	22,381	14,197	2,960	1,619
May	33,416	18,608	28,827	15,193	7,406	2,381
June	34,230	20,269	33,857	18,834	7,737	3,947
July	*28,412	19,514	*28,022	15,533	*6,855	3,726

*July, 1922, partly estimated.

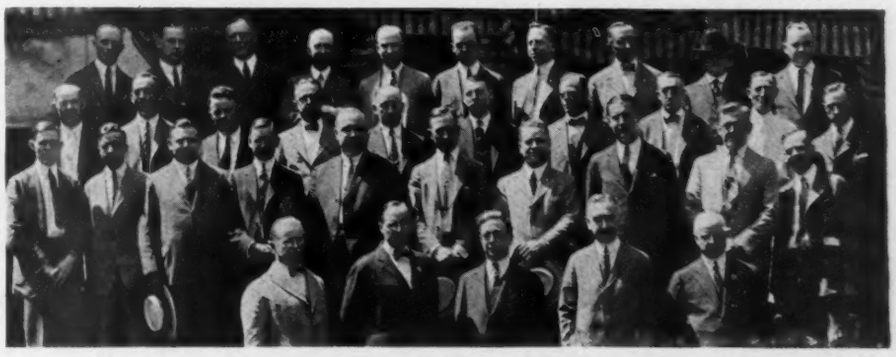
Providence, R. I., is to Install Republic Buses

The United Electric Railways Co., of Providence, R. I., has placed an order with the Republic Truck Sales Corp., for six 25-passenger single decker Republic buses, equipped with the Knight sleeve-valve engine, as a rail system adjunct.

The buses that they have purchased are similar to the twenty-seven recently installed in regular service in Baltimore, Md., by the United Railways and Electric Company of that city.

Sharon Elects New Directors

At a recent meeting of the directors of Sharon Pressed Steel Co., the following members were retired: W. L. Ulmer, W. H. Watkins, L. L. Knox and W. J. Parker. New members taking their places are L. B. LeBel, vice-president and director of the Cleveland Discount Co.; Edward O. Peck, secretary and director of the Cleveland Discount Co.; Harold G. Mosier, attorney at Cleveland; and A. E. Swan, first vice-pres., Sharon Pressed Steel Co.



Selden-Atlas Conference at Selden Factory

The Division Sales Managers and Branch Managers of the Atlas Truck Corporation, York, Pa., gathered with the Selden Field and Home Office organization at Rochester, N. Y., for a three-day conference. At this meeting the control of the Atlas organization was turned over to H. T. Boulden, Selden vice-president, who is the sales director of the Industrial Motors Corporation. The officers in the front row are, left to right: H. T. Boulden, Geo. C. Gordon, Selden president; Allan Cosgrove, Atlas vice-president; Wm. C. Barry and R. H. Salmons, Selden vice-president.

Literature

The Wayne Works, Richmond, Ind., has a comprehensive catalog on school transportation equipment which is of great value in choosing the proper vehicles for use in the consolidated school system. The book contains full descriptions of the various types of school bus bodies that can be mounted on standard chassis. The firm manufactures also a special cushion platform spring frame extension for a one-ton Ford truck chassis.

The Timken Roller Bearing Co., Canton, Ohio, has issued an instructive little booklet, "Good Driving is Mostly Nice Steering." Although the work has been prepared for passenger car drivers, many useful hints can be found of value to the truck driver.

Sparks, Leaflet No. 2, published by the Bastian-Blessing Co., Chicago, Ill., contains an article in lead welding and battery repair which may prove interesting to the repair shop.

Personal Items

W. L. Day, president and general manager of the General Motors Truck Co., celebrated his tenth year of connection with this company, September 1. His fellow workers made the occasion memorable to Mr. Day by presenting him with a gold plaque bearing the signatures of the employes connected with the organization for the past seven years or more.

Waltner P. Gartner, well known in automotive equipment circles, having been director of sales for the Motor Industry Supply Co. for the past year, has been appointed general manager of the Motor Supply Co., Inc., 1801 Oak St., Kansas City, Mo.

C. L. Graham, who was with the General Motors Co., in Flint, Mich., for four years and later went to Alma, Mich., as production manager of the Republic Truck Co., has been appointed factory superintendent of the King Motor Car Co., Detroit.

C. B. Harvey has been made Philadelphia branch manager of the Lapeer Trailer Corp., of Lapeer, Mich. Mr. Harvey has had considerable experience in the truck trade in Philadelphia.

Benton Hopkins, formerly advertising manager of Denby Motor Truck Co., Detroit, Mich., and previous to that associated in an advertising capacity with other automotive manufacturers, has joined the H. L. Rackliff Co., automotive marketing counselors of Cleveland and New York. Mr. Hopkins will be associated with the Rackliff organization as advertising counselor.

George H. Hunt, formerly manager of Stromberg Motor Devices, and for the past three years sales manager of the Disteel Wheel Corp., is now in charge of Rayfield carburetor sales to the manufacturers of trucks and passenger cars. His offices are 1401 David Whitney Bldg., Detroit.

Joseph S. Jacobs has been announced as secretary and assistant treasurer of the American Hammered Piston Ring Co., of Baltimore. Mr. Jacobs joined the company in 1919 and later became manager of the sales promotion department, becoming advertising manager the following year. He is succeeded by C. B. Cook, former assistant advertising manager.

A. G. McMillan, formerly director of sales of the Mitchell Motors Co., Racine, Wis., is now director of specialized sales of the Kardex Sales Co., of Tonawanda, N. Y.

R. H. Moehn, who has been at the Detroit assembling plant of the Martin-Parry Corp., has taken charge of the Buffalo assembling plant of that corporation.

Clark Osterheld has resigned as assistant general superintendent of the Stoughton Wagon Co., in charge of the motor truck department to become president of the Stoughton Mfg. Corp., recently organized to manufacture electric water heaters, etc.

H. W. Peters and **A. L. McCormick** have been elected to vacancies on the board of directors of the Detroit Automobile Dealers' Association brought about by the resignations of C. A. Triphagen and Charles W. Hathaway.

John A. Rhue, treasurer of Indiana Truck Corp., has just returned from an extended trip through Missouri, Kansas, Oklahoma and Texas. Mr. Rhue states that he is very much impressed with the way business is improving. He anticipates a good fall and winter business.

Henry J. Rowerdink, of W. H. Rowerdink & Son, Rochester, N. Y., has been elected to the presidency of the Rochester Accessory and Tire Dealers' Association. The organization, recently formed, has for its object the promotion of better conditions in the tire and accessory trade.

E. H. Tinsman, former comptroller of the Oakland Motor Car Co., Pontiac, has been made president and general manager of the Motor Sales Corp., Nash dealer at Jackson, Mich.

D. Burnett Tower, former district manager for the Brunswick Balke Collender Co., Chicago, Ill., in the Kansas City District, has been transferred to the West of New York District, with the Buffalo branch as headquarters.

O. L. Weaver has retired from active association with the Star Rubber Co. Mr. Weaver has been a prominent factor in the Star company since its reorganization in 1916, acting first as its secretary and later as its vice-president. His future plans are incomplete, but his efforts will doubtless be continued in the automotive field.

John A. White, whose career in the storage battery industry covers 23 years, has been appointed a vice-president in charge of sales to manufacturers of the U. S. Light & Heat Corp., manufacturers of USL Storage batteries. Mr. White started with the Electric Storage Battery Co., and in 1908 joined the National Battery Co., which was later absorbed by the United States Light & Heating Co.

W. D. Woodworth, who was with the Packard Motor Car Co., for seven years and who for the past seven years has been the general manager of the Wood Hydraulic Hoist & Body Co., Detroit, Mich., has resigned his position to become the general manager of the Maccar Truck Co., Scranton, Pa.

B. F. Wright has resigned as chief engineer of the Republic Motor Truck Co., Inc. He was formerly with the Federal Motor Truck Co. for many years in a similar capacity.

Removals and Trade Changes

The Dall Motor Parts Co., manufacturer of the Dall pistons, will move its factory and offices from Vermilion, Ohio, to Cleveland on October 1.

The Morse Chain Co., due to increasing business, has been compelled to move its Philadelphia offices to larger and more desirable quarters at 612 Franklin Trust Bldg., 18 South 15th St. The Philadelphia district manager is J. A. Meaney.

The Double Drive Truck Co. is now located in its new factory at Paw Paw Ave. and North St., Benton Harbor, Mich. The main building is 200 x 200 and land comprises seven acres, giving plenty room for expansion.

John S. Shirley

Recently appointed advertising manager of the "X" Laboratories, New York City, maker of "X" liquid. His experience in the advertising field covers 15 years.

Maurice Switzer

Vice-president of Kelly-Springfield Tire Co., new member of the Executive Committee of the Advertising Managers' Council of the M. & A. M. A.

G. L. Gillam

Sales manager of the Service Motor Truck Co., Wabash, Ind. He was formerly with the International Harvester Co., as sales manager of the Truck Dept.

W. C. Allen

Recently appointed sales supervisor for the Black & Decker Mfg. Co., Baltimore, who has been in charge of the company's Chicago office for the past year.

EDITORIALS

A Wise Manufacturer

RECENTLY, while calling upon a truck manufacturer, the subject of good salesmanship was brought up, which caused the manufacturer to relate an incident which it would be well for others in the trade to keep in mind.

One morning a well-known contractor stepped into his office and stated that he wanted to buy ten new trucks, trading in his old ones—of course.

Further conversation revealed the fact that the trucks to be traded-in were of a well-known make and the manufacturer was mentally surprised that the contractor did not prefer new ones of the same make. Incidentally these trucks were only a year old. He questioned the contractor as follows:

"What's the matter with the —— truck?"

"They're rotten," replied the contractor.

This was enough for the truck manufacturer. Instead of agreeing with the contractor as many would have done, he simply said: "I know that the ——— people build a good truck. If you feel that way about their product you would knock our trucks the same way later on. I wouldn't sell you one of our machines at twice the list price.

The manufacturer lost a sale, but he is the better off for it. Incidents such as this are the result of the trade-in evil. Too many manufacturers and dealers are educating the owner to trade-in, instead of educating him to keep his vehicles in good shape so as to realize the maximum service from the initial investment. The idea of trading-in to forego an overhaul is all wrong. The sooner the industry stops this the better.

Displaying Equipment Properly

ANY dealer who contemplates handling truck equipment must, from the very beginning, realize that such equipment will not sell itself. It must be merchandised, displayed and advertised the same as any other commodity.

So many automotive merchants seem to think that as long as they throw a lot of packages on a few shelves and stick up a few advertising signs around their place, that they are selling equipment. This brings to mind a sub-dealer's establishment, located on a prominent automobile thoroughfare in Philadelphia. This sub-dealer handles a well-known passenger car and truck chassis. Although he hasn't much room—it wasn't that which struck the writer—but the messy looking appearance of the accessory and equipment display. Along side of the entrance close to the front, he erected about two dozen shelves against the wall, and on these shelves the equipment lay. Practically $2500 worth of material was literally dumped on these shelves. There was no systematic arrangement. But the worst of all was the soiled appearance of the packages. They looked as if some mechanic had made it his daily duty to faithfully smear greasy hands over every package on those shelves. The condition of those packages alone would be enough to keep any owner from buying. Is it any wonder that some dealers say that there isn't money in handling equipment? Of course there isn't. Neither would the average hardware window display be attractive if a lot of rusty tools were displayed.

When the average man buys a piece of automotive equipment he wants to feel that the product he is buying is brand new, clean stock. Cleanliness is just as essential in the equipment department as it is in the repair department.

Co-operative Not Competitive

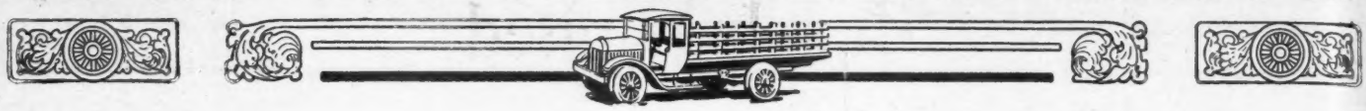
IN a recent statement, Elisha Lee, vice-president of the Pennsylvania Railroad, expressed himself in a way that shows that one of the leaders in the railroad field is not looking upon the motor truck as an intruder, but as a distinct helpmate.

"Public discussion of the subject, however," says Mr. Lee, "often goes astray in dealing with the motor truck exclusively as a rival or competitor of the railroads. The inference seems to be that it can live only on profits taken away from the rail lines, and that its future importance to the country must be judged from that aspect.

"Personally, I do not subscribe to these views. The importance and value of commercial motor transport to the country as a whole will not lie in menacing or injuring the railroads, but in the extent to which it is capable of aiding them to greater usefulness by assisting in the improvement of their indispensable public service and in the solution of their problems of operation and earnings."

Cheaper transportation and efficiency can only be obtained by co-ordination of the various mediums now available. The railroads realize that the less-than-carload traffic is a burden to them and that the motor truck is the logical medium to handle it.

NEW COMMERCIAL CARS



Bethlehem Brings Out New 1922-23 Line

THREE new models have just been announced by the Bethlehem Motors Corp., Allentown, Pa. This new line, which is of the late design, contains all the features of construction and assembly known to modern truck engineers. The line will be known as series 1922-23. The three models are designated by KN, GN, and HN with ratings of 2000, 4000 and 6000 lb. respectively.

The engine in all three models is identical in design and construction, differing only in size. The engine is a four-cylinder, removable head, cast-in-bloc type, suspended from three points. A Pierce centrifugal type governor is used in all three models. It is mounted between the carburetor and intake manifold and governs the engine in first and second gear, as well as the truck against excess speed in high gear.

The crankshaft is of open-hearth steel; the connecting rods, drop forged from selected open hearth; camshaft, single piece, drop forged cast integral; valves, forged from steel with cast iron seats welded on; pistons and cylinders, French gray iron; and rings, cast iron. All the connecting rod and crankshaft bearings are bronze back, lined with babbitt.

Force-feed and splash system of lubrication is used; force to all crankshaft bearings and timing gears and splash to piston pins and cylinder walls. A gear pump is employed. Cooling is through thermo-syphon system. The radiator is manufactured by the G & O Mfg. Co. Water passages and compartments are unusually large. The model KN radiator has a pressed steel shell and is mounted on a felt cushion, being attached to the same with a stud and spring. In the other two models the radiators are of honeycomb construction with huge cast iron tanks and pillars. Cooling is further aided by an Automotive Parts Company fan. It is mounted on Hyatt roller bearings in oil-tight and dust proof compartments.

Gasoline is fed from a tank located in the cowl to a Zenith carburetor, which is of a special non-adjustable type. The tanks are 14 and 16 gal. capacity.

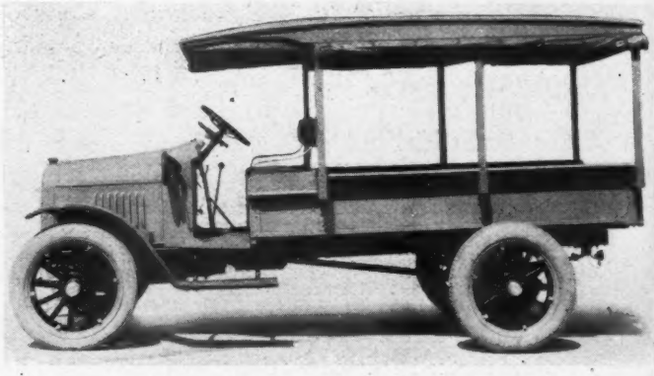
The electrical equipment includes a Gray & Davis two-unit system; making electric starting and lighting standard equipment, and a special truck type Willard storage battery mounted under the left-hand side of the seat of all models.

From the engine the power is carried through Borg & Beck clutches in the two lighter models and a Fuller & Sons clutch in the heavy-duty model, to a selective sliding gear transmission mounted in unit with the engine. Three speeds forward and one reverse are provided in the two lighter models and four speeds forward and one reverse in the three-ton truck. New Departure bearings are used throughout.

a continual bath of oil inside. Rear axle ratios on the three models are as follows: One-ton, 5.875 to 1; two-ton, 8.4 to 1; and three ton, 8.8 to 1. The Hotchkiss type of drive is employed, all rear-axles being attached to the frame by springs only. In order to make certain that there shall be no shifting of springs, the top leaves have been cupped up into a hole in the spring clip pad. This arrangement is said to make shifting of the axle impossible.

The front axles are of the conventional I-beam construction and are made by the Standard Parts Co., and by the Sheldon Axle & Spring Co.

Semi-elliptic springs are used all around. They receive constant lubrication from the Myers Magazine Spring and Shackle oil system. All the springs are of chrome vanadium steel and are made by the Mather Co. A feature of the Bethlehem line are the shackle pins. They are special design and are made from hardened and ground steel and provided with felt wicks running through the center, also leads to the outside for proper lubrication. The pins are secured in place by a special locking device. The frames are made by the Detroit Pressed Steel Co., and are of special alloy steel, channel section of rigid construction with a great margin of safety and strength.



Bethlehem Model KN, the One-Ton Delivery Job Recently Introduced Together With a Two and Three Ton Job.

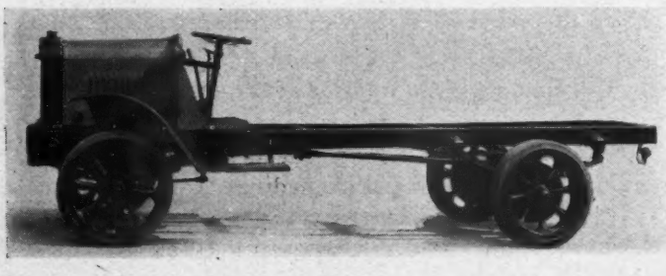
The driveshafts are described as of the latest improved standard design. They are of carbon steel tubing, heat treated. The one-ton employs two universal joints and the one and two-ton models, three. The center universal is supported to the frame by a bracket containing a self-aligning ball bearing. The universals are of Spicer and Universal Products makes.

Final drive in the one-ton model is through a Standard Parts spiral bevel gear, semi-floating axle. All driving members of this axle are mounted on Bower straight roller bearings. The two and three-ton axles are of the double reduction type made by the Wisconsin Axle Co. In this axle the load is carried on the alloy steel housing of the axle while the driving members are propelling same in

A Ross steering gear is used on the one-ton model and Lavines on the two and three-ton models. They are all of the irreversible worm and nut type. Hand wheel 18 in.

The wheels used on the Bethlehem one and two-ton trucks are of the wood artillery type and the three-ton of specially cast metal alloy. Pneumatic and solid tires are used.

Standard equipment includes two cushions, electric head and tail lights, horn, ammeter, accelerator, complete tool kit, jack, license holders, front and rear. Tire pump and spare rim are furnished on the one-ton model only.



New Bethlehem Heavy-Duty HN Model. It is a Three-Ton Capacity Chassis.

Kissel Announces New 18-Passenger Coach Limited

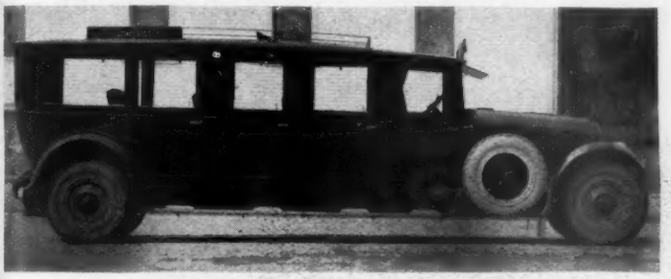
THE new Kissel Coach Limited just announced by the Kissel Motor Car Co., Hartford, Wis., is featured by its chassis and body design, comfort and finish. It is a departure from the customary bus design, possessing in body fashion and finish, appointments and equipment, and mechanical innovations, the characteristics that make for the riding ease, operating smoothness and roadability of a sedan.

The chassis is not heavy nor the engine of truck-like proportions. It is a specially designed chassis that is practically the same as that of the Kissel custom-built passenger car chassis, with those necessary additions to take care of increased wheelbase and weight of a body of 18-passenger capacity.

The coach body is hand made throughout with all sills, frames and body pillar connections specially designed, constructed and braced with angle irons that are claimed to prevent the body from spreading or squeaking from developing. All lumber used is from prepared northern ash, covered with 14 gage aluminum. Entrance is made on the right hand side through four doors, each door opening directly into a seat of sedan width and depth, with plenty of leg room. The seats and backs are shaped and built to conform to the most comfortable sitting and riding position and are upholstered in Spanish leather. The seat backs are 24 in. high and are equipped with slumber rolls for added comfort.

All four doors automatically lock when closed and can only be opened after the driver releases the catches by operating a releasing lever. This device prevents a passenger from opening the door while the coach is in operation.

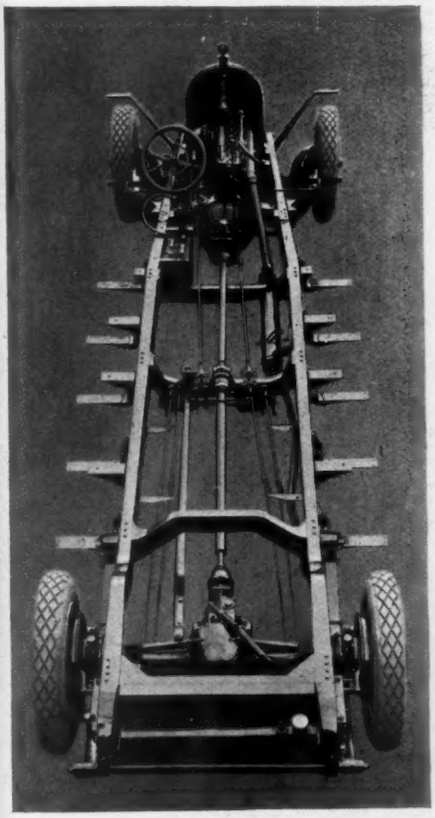
Ventilation without draft is attained by four adjustable roof ventilators installed in the roof, two in front and two in the rear. The ten windows can be lowered, in addition to the windshield. The lighting system is composed of eight special dome lights in the ceiling, flooding the interior with an indirect light that is not only easy on the eyes, but permits reading with comfort.



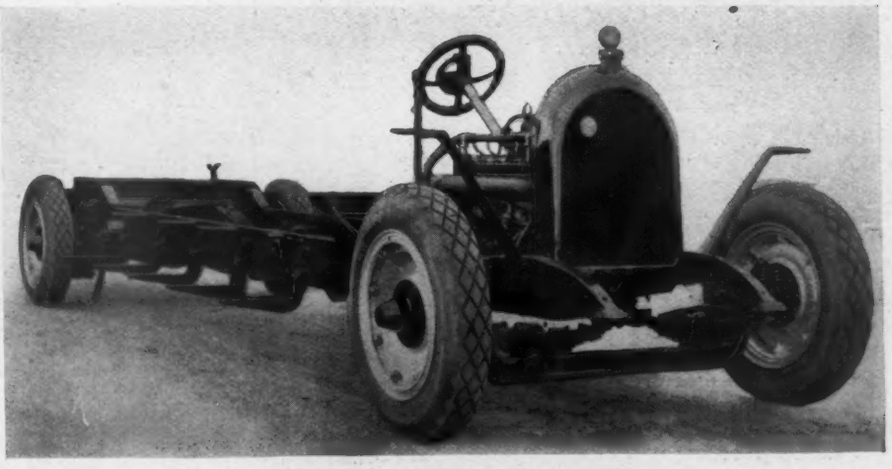
Straight Side View of the New Kissel De Luxe Coach

Right: Front View Showing the Characteristics of Massiveness and Attractiveness of Design.

Lower: Three-Quarter View of the New Kissel De Luxe Coach Chassis.



Elevated View, Showing General Construction and Disposition of Components

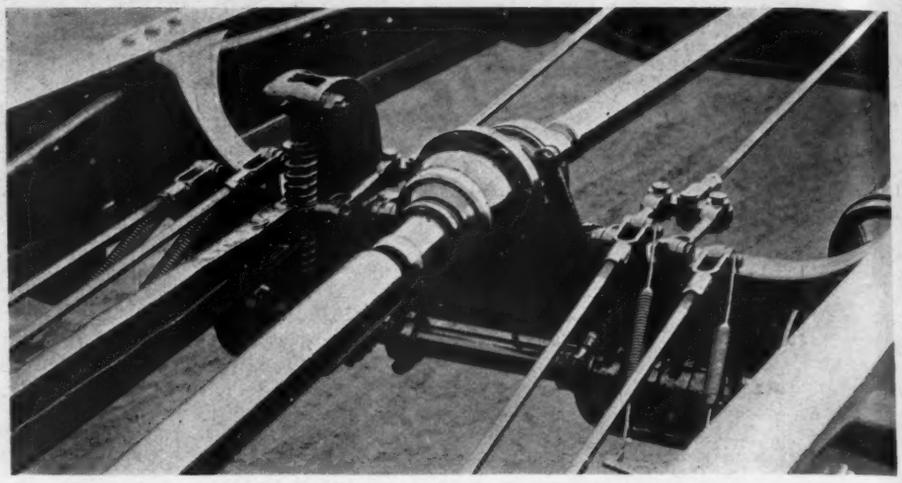


For cold weather travel, proper temperature is assured from four Perfection heaters.

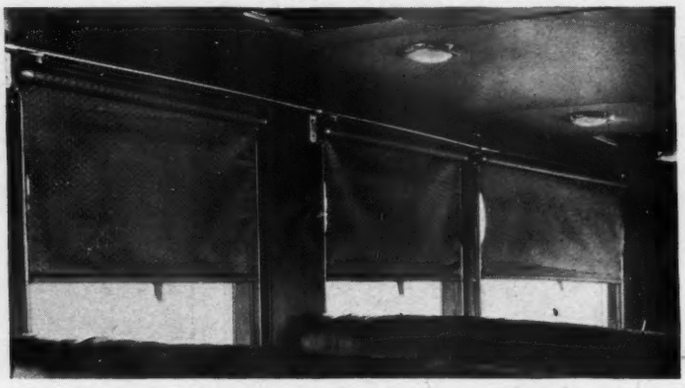
To give the coach maximum roadability a 43-in. frame is employed. It is of same design as the regular Kissel custom-built frame with a kick-up for low body design and allows for an even distribution of balance and weight.

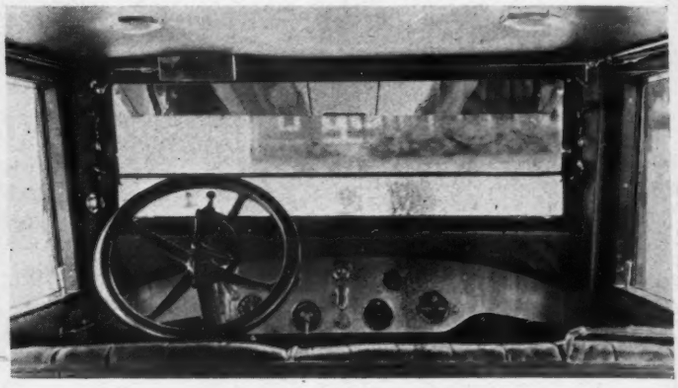
The frame is 43 in. wide with 8-in. side rails of ¼ gage and equipped with five cross-bars. This frame, because of its construction, is claimed to possess resiliency and strength at minimum weight. Semi-elliptic alloy steel springs are used 38 x 2½ in. front, and 60 x 2½ in. rear. Both springs are equipped with side play adjustments claimed to eliminate rattles or squeaks from developing in the springs.

A 61-hp. Kissel engine empowers the Coach Limited up to a speed of 35 m.p.h. The oil supply is automatically regulated by the speed of the engine, while the cooling system has a thermostatical control that maintains an even temperature in winter and summer alike.



Close-up of Propeller Shaft Universal Joint Mounting. It is Rigidly Braced by a Lateral Frame Member





Details of the Windows, Curtains, Ceiling, Instrument Board, Windshield Cleaner, and Door-Lock Release

Showing All Doors Open. These Doors Are Controlled by the Driver at the Seat. They Cannot be Opened Until Released by Him

Resume of Chassis Specifications

Engine—Kissel Custom-Built Six 3 5/16 by 5½, developing 61 hp. at 2300 r.p.m.
Clutch—Multiple disk dry plate.
Universals—2 double universals.
Transmission—Selective sliding; 3 speeds forward, 1 reverse.
Transmission Reductions—Low, 3.66:1; second, 1.81:1; reverse, 4.58:1.
Rear Axle Reduction—6.33:1.
Steering Gear—Ross screw and nut type, 18 in. hand wheel.
Axles—Front: I-beam section, drop forging; alloy steel spindles; taper roller bearings; spring centers, 30 in.; track at ground, 64 in.
Axles—Rear: Double reduction; cast steel housing; alloy steel shafts; track, 66 in. at ground; spring centers, 48 in.
Brakes—On rear wheels: Internal expanding; foot brake, 17 x 2½ in; emergency brake, 12 x 2½ in.
Wheels—Special design aluminum.
Tires—32 x 6 pneumatic.
Wheelbase—202 in.; height of chassis from ground, loaded, 22½ in.; weight of chassis with gasoline, oil and water, 5120 lb.; weight of chassis without gasoline, oil and water, 4850 lb.; weight of bus complete, 7780 lb., without passengers.

The New Vim—A Brand-New Product

THE new Vim truck, which is being produced by the Vim Motor Truck Co., of Philadelphia, Pa., measures up strictly with the claims made by its manufacturers. It is new—brand new—from radiator to tail light. In fact, a personal examination and road demonstration of this new vehicle by the writer, Managing Editor of this publication, convinced him that the manufacturers are inclined to be rather conservative in their claims for performance. The new Vim is entirely different from the former model with the exception of the name.

In the first place the new Vim is being built by a new organization which is composed of men who have been through the mill, figuratively speaking, and who appreciate that a new truck these days must be capable of giving something new in the way of performance, maintenance, economy of operation and length of service.

When the engineering staff commenced laying out plans for this new Vim about two years ago, they foresaw the fallacy of building just another truck. It meant the designing of something different—not simply a change in rating, a change here and there, but a brand new proposition.

The new Vim is the result of working towards an ideal. It is a vehicle that meets all the delivery requirements of the average business man or merchant. It is a speed model, with lots of power on the hills, having a heavy duty, slow speed, low compression motor with high gear ratios. This correct combination of slow speed motor and high gear ratios insures economy of operation, less gas consumption and less repair work.

The new Vim is a clean cut job throughout, and the accessibility feature is apparent by a glance under the hood. It reveals the fact the designers have carefully considered the maintenance angle and have made it possible to get at any one of the units in the vehicle in the minimum length of time. For instance, the whole power plant can be removed by the average mechanic in ninety minutes.

No efforts have been spared to make the driver's quarters as comfortable as possible. The seat cushions are all spring cushioned and heavily upholstered.

The chassis lists at $995. With open express body the price is $1185 and with closed panel body $1210.

The ruggedly constructed engine is of the four-cylinder, L-head type, with a bore and stroke of 4 and 5 in., respectively; rated horsepower, 25.6. The cylinders are ground and fitted with extra long pistons equipped with three rings, one of which is an oil wiper to prevent lubricant from entering the combustion chamber. The piston pins which are 1⅜ in. in diam., operate in removable bronze bushings. Every engine crankshaft is balanced on an Akimoff balancing machine and every engine is given a dynamometer test.

The vanadium steel crankshaft is carried in three main bearings, all of which are 2 in. diam. and of generous lengths. The connecting rods are drop forgings of I-beam section, having 2-in. x 2¼-in. bearings, cast integrally with the rods. Valves are fully enclosed. The valve seats are fully water jacketed. By removing two cover plates, each held in place by a single stud bolt, the valves are made accessible for adjustment. The combination generator and distributor and the camshaft are driven by the timing gear assembly, which consists of four spiral gears. The displacement of the timing gears permits a neat and free lay-out of other units.

Lubrication is entirely by pressure feed. The oil pump, driven direct from one of the timing gears is located in the lower part of the crank case where it is submerged at all times. The oil is entirely cleaned of impurities before it re-enters the pump.

A 1-in Zenith carburetor gravity fed from a 14-gal. tank located under the seat is used. Intake gas mixture is preheated by a hot spot integrally cast manifold.

Cooling is by thermo-syphon system. The radiator, which is of the tubular fin type has a special mounting. Radiator core is carried on a pressed steel shell which is flexibly supported on the frame. The shell supports the core, instead of the core supporting the shell. Cooling is further aided by an 18-in. dust-proof, and self-lubricating fan driven by a 1½-in. belt.

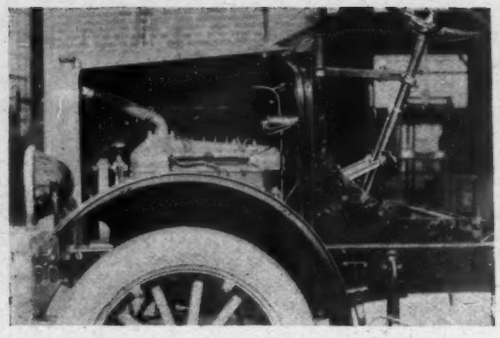
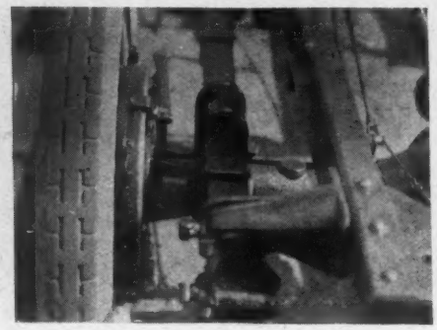
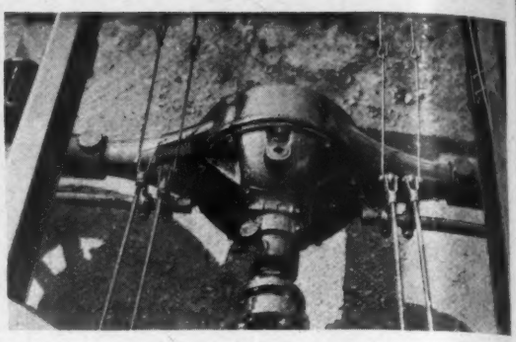
Power is transmitted from the engine through a multiple disk dry plate clutch to gearset providing three speeds forward and one reverse. Engine, clutch and transmission are mounted in unit. The gear ratios of the selective sliding gear type transmission are as follows: Low, 3.24:1; second, 1.66:1; high, 1;1; and reverse, 4.16:1. The main shaft of the transmission is alloy steel and is mounted in ball bearings. Its power take-off is provided for tire pump on it.

From the transmission, drive is taken through a seamless steel tubular propeller shaft equipped with two metal universal joints of the self-lubricating type. Final drive is through a semi-floating spiral bevel gear type rear axle, providing a final gear reduction of 4.7:1. Torque and propulsion effort is taken through the Hotchkiss method. Differential ring and pinion are mounted in unit permitting the complete section as a unit to be removed without disturbing the adjustment.

The brakes which actuate on the rear wheel drums, are of the integral expanding and external contracting type. They are 16 in. in diameter and 2½-in. face. The former is the emergency and the latter

Three Views of the New Vim Chassis

Specifications of the new Vim include a new heavy-duty slow speed engine, low compression engine, which together with high speed gear ratios makes this new Vim an exceptional hill climber.

Close-ups of the New Vim

Arrangement of steering wheel and pedals; also instrument board which also acts as a vibration dampener, between steering wheel and dash. The new Vim has large, powerful brakes, sixteen inches. The brake lever arrangement is very simple and rattle-proof

the service brake. Springs in the brake operating mechanism automatically take up wear in the clevis and shafts. They also eliminate rattles. The frame is pressed steel channel section, 5-in. maximum depth with 1¾-in. flange. It is fitted with five cross members. The front member also serves as a bumper. The second member, a readily detachable steel forging, serves as the front engine support. The fly-wheel housing acts as the third member. The fourth member is at the point where the front hangers for the rear springs are attached to the frame, and the fifth is the conventional rear piece reinforced by gusset plates.

The springs are semi-elliptic throughout, being 2 in. wide and 38 in. long and having nine leaves in the front and 2¼ in. x 50½ in. with ten leaves in the rear.

The steering gear is of the worm and gear type fitted with ball thrust bearings. The wheel is 18 in. in diameter. Sparking control levers and horn button are mounted on the steering column. The carburetor choke is also mounted on this column. The dash is built of one main plate of 11 gage sheet steel.

The instrument board serves two purposes. It connects the steering column to the dash, thereby minimizing vibration of the steering wheel. The switch, and ammeter are placed on this board within convenient sight of the operator.

The wheelbase is 108 in. and turning radius 19 ft. The wheels are natural finish wood, equipped with 32 x 4 cords.

Chassis equipment includes electric head-lights with improved lenses, tail-light, motor-driven horn, complete set of tools, dash, front fenders, gasoline tank, running board, jack and pump.

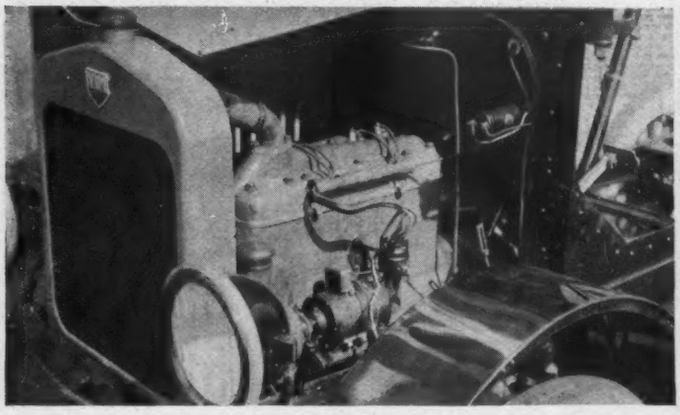
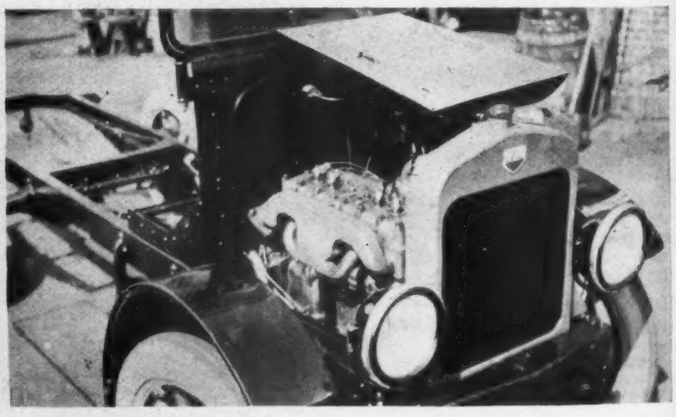
Two of the bodies built by the Vim Company expressly for the new Vim chassis are the open express and closed panel bodies. The open express body is strongly constructed and amply capable of sustaining the duress of heavy-duty express service. The uprights are made of ash and are heavily reinforced with steel sides rigidly bolted to them. Tail-gate is 12 in. high and is sustained by strong covered chains. The inside loading dimensions are: Length, 85½ in., width 44½ in. and height 55¼ in. The body is finished in olive green.

The panel body designed for general delivery is roomy, closed and offers protection against dust and weather. The body frame is of ash reinforced with steel and the heavy wood floors are protected with metal skids. The rear doors are solid and have glass windows. The finish of the job is similar to that of the open express body. Loading dimensions are also identical.

As previously mentioned the Vim company is now in the hands of an entirely new organization of which E. K. Conneely is president; A. G. Schneider, vice-president; Frank G. Thomas, secretary and treasurer; and S. H. Hale, sales and advertising manager.

The new Vim is being produced at the Philadelphia plant, located in the Nicetown section. The new plant consists of eight buildings, located on a 32-acre plot of ground, providing at the same time ample room for expansion.

A View Showing Progressive Production Method in One of the New Vim Buildings

Left and Right Sides of the New Vim Engine

Note the accessibility to all units. Starting, lighting and ignition is by Westinghouse with Willard battery

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V—V-Shape, F—Flat, R—Round

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Acason R–1	4	1/4	1										11 1/2	3	1/4	2	11 1/2	3	1/4	2	112	34
Acason RB–1 1/2	4	1/4	1										11 1/2	3 1/2	1/4	2	11 1/2	3 1/2	1/4	2	112	34
Acason H–2 1/2	3	1/4	1 1/4										13 1/2	3 1/2	1/4	2	13 1/2	3 1/2	1/4	2	130	35
Acason –L3 1/2	3	1/4	1 1/4										16	3 3/4	1/4	2	16	3 3/4	1/4	2	163 3/4	35
Acason M–5	3	1/4	1 1/2										18	4 1/2	1/4	2	18	4 1/2	1/4	2	167 1/2	35
Ace, Series A–1 1/2	3	1/8	1 1/4	1 1/4	H	10 3/4	2 1/4	6 1/2	2	37 1/2	1	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	122 1/2	32
Ace, Series A–2 1/2	4	1/4	1 1/4	1 1/4	V	10 3/4	2 1/4	5 1/2	1 1/4	33	1 1/4	F	13	3 1/4	1/4	4	13	3 1/4	1/4	4	144 1/2	32
Acme 20–1	3	1/8	1	1	V	11	2	11	2	38 3/4	3/4	V	10 1/2	2 1/2	1/4	4	10 1/2	2 1/2	1/4	4	110 3/8	34
Acme 30–1 1/2	3	1/8	1	1	H	11	2	11	2	38 3/4	3/4	V	12	3 1/4	1/4	4	12	3 1/4	1/4	4	110 3/8	34
Acme 40–2	4	1/4	1	1	H	8	1 1/2	11 1/2	1 1/2	40	1 1/4	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	123 3/8	34
Acme 60–3	4	1/4	1 1/4	1 1/4	H	7	1 1/4	11	1 1/4	33 3/4	3/4	V	13	3 1/2	1/4	4	13	3 1/2	1/4	4	132 3/8	34
Acme 60L–3	4	1/4	1 1/4	1 1/4	H	10	1 1/2	13	1 1/2	33 1/2	1 1/4	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	140 1/8	34
Acme 90–4 1/2	4	1/4	1 1/4	1 1/4	H	11 1/2	1 1/2	13	1 1/2	33 1/2	1 1/4	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	4	150 1/4	36
Acme 125–6 1/4	3	1/4	1 1/2	1 1/2	H	11	2	11 1/2	2	40 1/2	2	F	18	4	1/4	4	18	4	1/4	4	159 3/4	37
American 25–2 1/2	4	1/4	1/8	1 1/4	V	19	1 3/4	17	1 1/2	38	2	F	19	2 1/4	1/4	4	19	2 1/4	1/4	4	142	33
American 40–4	4	1/4	1/8	1 1/4	V	19	1 3/4	9 1/2	1 3/4	38	2	F	57	2 1/2	1/8	2	41 1/2	2 1/2	1/8	2	142	37
American 50–5	4	1 1/4	1/8	1 1/4	V	19	1 3/4	9 1/2	1 3/4	38	2	F									158	37
Apex C–1	3	1/8	1	1	V	7 1/4	2	12	2	36 1/2	7/8		42	2		2	41 1/2	2		2	102	35 1/2
Apex D–1 1/2	3	1/8	1	1	V	7 3/4	2	12	2	36 1/2	7/8		42	2		2	41 1/2	2		2	102	35 1/2
Apex E–2 1/2	4	1/4	1	1 1/4	V	7 1/2	1 1/4	8	2	32	1		54	2 1/4		2	53 1/4	2		2	128	31 1/2
Apex G	3	1/8	1	1	V	12	2	15 1/2	2	34 1/2	7/8		24	2		2	41 1/2	2		2	102	35 1/2
Armleder 21–1 1/2	4	1/4	1	1/8	V	12	1 3/4	16 1/2	1 1/4	31 1/2	2	F	11 1/2	3 1/4	1/4	4	11 1/2	3 1/4	1/4	4	Opt	32
Armleder 40B–1 1/2	4	1/4	1 1/4	1/8	V	9 1/2	2	11 1/2	1 1/4	33 1/4	2	F	13 1/4	3 1/2	1/4	4	11 1/2	3 1/2	1/4	4	Opt	32
Armleder 40C–1 1/2	3	1/8	1 1/4	1/8	V	10	1 1/2	11 1/2	1 1/4	35	1 1/4	F	13 1/4	3 1/2	1/4	4	11 1/2	3 1/2	1/4	4	Opt	32
Armleder KW–3 1/2	4	1/4	1 1/4	1/8	V	12	2	16 1/2	1 1/4	35 3/4	2	F	42	3	1/8	1	16	3 3/4	1/4	8	Opt	36
Armleder KWC–3 1/2	3	1/8	1 1/4	1/8	V	10	1 1/2	16 1/2	1 1/4	35 3/4	2	F	42	3	1/8	1	16	3 3/4	1/4	8	Opt	36
Armleder HWB–2 1/2	4	1/4	1 1/4	1/8	V	9 1/2	2	11 1/2	1 1/4	33 3/4	2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	Opt	32
Armleder HWC–2 1/2	4	1/8	1 1/4	1/8	V	10	1 1/2	11 1/2	1 1/4	35	1 1/4	F	13 3/4	3 1/2	1/4	4	13 3/4	3 1/2	1/4	4	Opt	32
Atco B–1 1/2	4	1/4	1	1	V	11	2	11	1 1/4	31 1/2	2	F	25 1/2	2 1/2	1/8	4	18	2 1/2	1/8	4	109 3/4	32
Atco B1–1 1/2	4	1/4	1	1	V	11	2	11	1 1/4	31 1/2	2	F	46	2 1/2	1/8	2	46	2 1/2	1/8	2	109 3/4	32
Atco A–2 1/2	4	1/4	1 1/4	1 1/4	V	12	2	11	1 1/4	33 1/4	1 1/4	F	25 1/2	2 1/2	1/8	4	18	2 1/2	1/8	4	124 1/4	33
Atlas 22–1	3	1/8	1	1/4	V	10	1 3/4	11	1 1/2	33 1/2	1 1/2	F	40	2	1/8	2	22 1/2	2 1/4	1/8	1	84 3/4	33 1/4
Atterbury 20R–1 1/2	4	1/8	1	3/8	....	8	1 1/2	14	1 1/2	38 11/16	1 1/4	F	11 1/8	3 1/4	1/4	4	11 1/8	3 1/4	1/4	4	122 1/8	34
Atterbury 22C–2 1/2	4	....	1 1/4	3/8	....	10 1/2	1 1/2	16	1 1/2	40 1/2	1 1/2	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	129 1/4	34
Atterbury 22D–3 1/2	4	....	1 1/4	3/8	....	10 1/2	1 1/2	16	1 1/2	40 1/2	1 1/2	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	4	142 3/4	37 1/2
Atterbury 8E–5	3	1/4	1 1/2	3/8	....	14	2	20 1/2	2	40	2	F	17 3/4	4	1/4	4	17 3/4	4	1/4	4	157 1/8	37 1/2
Autocar XXI–F–2	4	1/8	1 1/8	....	....	3	1 1/8	4	1 1/8	....	....	....	16 1/4	2 1/2	1/8	4	13	2 1/2	1/8	4	91	34
Autocar XXI–G–2	4	1/8	1 1/8	....	....	3	1 1/8	4	1 1/8	....	....	....	....	2 1/2	1/8	4	13	2 1/2	1/8	4	114	34
Autocar XXVI–Y4	3	1/4	1 1/8	....	....	3 1/2	1 1/2	3	1 1/2	49 1/4	2	F	25 1/2	2 3/4	1/4	4	25 1/2	2 3/4	1/4	4	140	34 1/8
Autocar XXVI–B4	3	1/4	1 1/8	....	....	3 1/2	1 1/2	3	1 1/2	49 1/4	2	F	25 1/4	2 3/4	1/4	4	25 1/2	2 3/4	1/4	4	176	34 1/8
Autocar XXVII–H	3	1/4	1 1/8	....	....	3 1/2	1 1/2	3	1 1/2	48 1/4	2	F	22 3/8	2	1/4	4	22 3/8	2	1/4	4	131 1/2	34 1/8
Autocar XXVII–K	3	1/4	1 1/8	....	....	3 1/2	1 1/2	3	1 1/2	48 1/4	2	F	22 3/8	2	1/4	4	22 3/8	2	1/4	4	155 1/2	34 1/8
Available H–1 1/2	4	1/8	2 1/4	1 1/8	....	11	1 5/8	14	1 5/8	40	2	....	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	32
Available H–2 1/2	3	1/8	2 1/4	1 1/8	....	11	1 5/8	14	1 5/8	40	2	....	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	32
Available H3	3	1/8	2 1/2	1 1/8	....	11	1 5/8	14	1 5/8	42	2	....	16	3 3/4	1/4	4	16	3 3/4	1/4	4	168	36
Available H5	3	1/4	2 1/2	1 1/8	....	12	2	16	2	40	2	....	18	4	1/4	4	18	4	1/4	4	168	38
Available H2	4	1/8	2 1/4	1 1/8	V	12	1 5/8	14	1 5/8	40	2	F	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	32
Available H2 1/2	4	1/8	2 1/4	1 1/8	V	12	1 5/8	14	1 5/8	40	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	32
Available H3 1/2	4	1/8	2 1/2	1 1/8	V	12	1 5/8	14	1 5/8	42	2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	168	36
Available H5	4	1/4	2 1/2	1 1/8	V	12	2	16	2	40	2	F	18	4	1/4	4	18	4	1/4	4	168	38
Avery 1	3	1/8	....	1	....	10	2	6 1/2	2	31 3/4	1 1/2	F	19 1/2	2	1/8	4	18 1/2	2	1/8	4	85	34
Bell M–1	4	1/8	1	1/8	V	10	2	10	1 1/2	32	2	F	36	2 1/2	1/8	1	42	3	1/8	1	110	34
Bell E–1 1/2	4	1/8	1	1/8	V	10	2	10	1 1/2	32	2	F	39	2 1/2	1/8	1	48	3	1/8	1	114	34
Bell O–2 1/2	4	1/8	1 1/4	1/8	V	10	2	10	1 1/2	32	2	F	48	2 1/2	1/8	1	54	3	1/8	1	126	34
Bessemer G–1	3	1/8	1	1/8	V	11 1/2	2 1/4	10	2 1/4	42	5/8	V	47 1/2	2 1/2	1/8	2	45 1/2	2 1/4	1/8	2	98 1/4	34
Bessemer H–2–1 1/2	3	1/8	1	1/8	V	11 1/2	2 1/4	10	2 1/4	43	5/8	V	56 1/2	2 1/2	1/8	2	55	2 1/4	1/8	2	116	34
Bessemer J2–2 1/2	3	1/8	1 1/4	1/8	V	12	1 1/2	5	1 7/8	36 1/4	1 1/4	F	56 1/2	2 1/2	1/8	2	55	2 1/2	1/8	2	142 3/8	34
Bessemer K2–4	3	1/8	1 1/4	1/8	V	11 1/2	2 1/4	10	2 1/4	39 5/8	1 1/2	F	58 1/2	3 1/2	1/8	2	30 1/4	4 1/2	1/8	1	157 1/2	38
Bethlehem KN–1	3	1/4	....	1	H	8 3/4	2 1/8	8	2 1/8	35 1/2	1 1/4	F	15 1/2	2 1/4	1/8	1	15	2 1/4	1/8	2	90	32 1/8
Bethlehem GN–2	3	1/4	....	1 1/4	H	8 1/2	2 1/8	9 1/2	2 1/8	40 7/8	1 1/2	F	16 7/8	2 1/2	1/8	1	12 1/4	2 1/2	1/8	1	120	34 1/2
Bethlehem HN–3	3	1/4	....	1 1/4	H	8 1/2	2 1/8	9 1/2	2 1/8	40 7/8	1 1/2	F	20	2 1/2	1/8	1	15 1/2	2 1/2	1/8	1	138	34 1/2
Brinton C–1 1/2	3	1/8	1 1/8	3/8	....	11	1 1/4	13	1 1/4	33	1/8	F	39	2 1/2	1/8	1	38	2 1/2	1/8	1	118	33
Brinton D–2 1/2	3	1/8	1 1/8	3/8	....	11	1 1/4	13	1 1/4	33	1/8	F	13	3 1/2	1/8	2	13	3 1/2	1/8	2	135 1/2	33
Brockway S2–1 1/2	3	1/8	1	....	V	10 1/2	2 1/4	5 1/2	2 1/4	39	1 1/4	F	20	2	1/8	4	20	2	1/8	4	118	32
Brockway K4–2 1/2	3	1/8	1 1/4	....	V	6 1/2	1 1/4	13	1 1/4	34	1 1/4	F	12	3 5/8	1/8	4	12	3 5/8	1/8	4	142	34
Brockway R–2–3 1/2	3	1/8	1 1/4	....	V	9 1/2	1 1/4	14	1 1/4	34	1 1/2	F	15 5/8	3 3/4	1/8	4	15 5/8	3 3/4	1/8	4	176	36
Brockway T–5	3	1/4	1 1/2	....	V	13	2	22	2	40 1/8	2	F	18	4	1/8	4	18	4	1/8	4	176	36
Buffalo Tractor-Truck	4	1/8	1 1/4	1/8	V	7	1 5/8	13	1 5/8	41 1/2	2	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	124	34
Case	3	1/4	1 1/8	1 1/8	V	7	1 1/2	6	1 1/2	47 7/8	2	....	25 1/2	2 1/2	1/8	4	24 1/4	2 1/4	1/8	4	106	31
Chicago C–1 1/2	4	....	1	1 1/2	....	....	....	....	....	....	....	....	40	2	....	....	40	2	....	....	123	32
Chicago C–2 1/2	4	....	1 1/4	1 3/4	....	....	....	....	....	....	....	....	40	2	....	....	40	2	....	....	135	32
Chicago C–3 1/2	4	....	1 1/4	1 3/4	....	....	....	....	....	....	....	....	46	2	....	....	46	2	....	....	180	36 3/4
Chicago D–5	4	....	1 3/4	1 3/4	....	....	....	....	....	....	....	....	46	2	....	....	46	2	....	....	180	36 3/4
Climber A–20	3	1/8	1	1 1/4	H	....	....	....	....	....	....	....	32	1	....	....	32	1	....	....	120	34
Clydesdale 120B–5–6	3	1/4	1 1/8	1/8	V	9	2	18 1/2	2	46 1/2	2	F	18	4	1/4	4	18	4	1/4	4	131	38
Clydesdale 90–3 1/2–4 1/2	3	1/8	1 5/8	1/8	V	9	1 1/2	14	1 1/2	42	1 1/2	F	16	3 1/4	1/4	4	16	3 1/4	1/4	4	143	38
Clydesdale 65EX 2 1/2–3	3	1/8	1 5/8	1/8	V	9	1 1/2	14	1 1/2	42	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	132	33 1/4
Clydesdale 65X–2 1/2–3	3	1/8	1 1/8	1/8	V	11	1 1/2	11	1 1/2	40	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	137	33 1/4

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Clydesdale 42–1½–2	3	⅛	1 ⅛	⅛	V	15	2	12	2	41	¾	V	12	3¼	¼	4	12	3¼	¼	4	117	34
Clydesdale 20–1–1½	3	⅛	1 ⅛	⅛	V	15	2	12	2	41	¾	V	11¼	3	¼	4	11¼	3	¼	4	95	34
Clydesdale 18–¾–1¼	3	⅛	1 ⅛	⅛	V	15	2	12	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	95	34
Clydesdale 10–¾–1¼	3	⅛	1 ⅛	⅛	V	9	2	9	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	109	34
Clydesdale 10A–1–¾–1¼	3	⅛	1 ⅛	⅛	V	9	2	9	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	109	34
Collier 18–1	3	⅛	1	....	V	9¾	2	10½	1¼	40	1	F	24	3½	⅛	4	24	3½	⅛	4	106	35¼
Collier 19–1½	3	⅛	1	....	V	9¾	2	10½	1¼	40	1	F	24	3½	⅛	4	24	3½	⅛	4	120	32
Collier 21–2	3	⅛	1½	....	V	6	1½	10½	1¼	40	1	F	27½	3½	⅛	4	27½	3½	⅛	4	132	32
Collier 22–2½	3	⅛	1½	....	V	6	1½	10½	1¼	40	1	F	27½	3½	⅛	4	27½	3½	⅛	4	144	32
Commerce 9–1500	3	⅛	1	⅛	V	10	2	10	2	44	¾	V	50	2	⅛	2	48½	2	⅛	2	92 5/8	34
Commerce T–1500	3	⅛	1	⅛	V	10	2	10	2	44	¾	V	50	2	⅛	2	48½	2	⅛	2	92 5/8	34
Commerce 12–3000	3	⅛	1	⅛	V	10	2	10	2	44	¾	V	45	2½	⅛	2	43	2½	⅛	2	99 5/8	34
Commerce 16–4000	3	⅛	1	⅛	V	10	2	10	2	44	¾	V	50¾	2½	⅛	2	48	2½	⅛	2	108 5/8	34
Commerce 25B–5000	4	¼	1¼	⅛	V	9½	1½	15½	1½	42	1½	F	13	3½	¼	4	13	3½	¼	4	132	34
Concord A–2	4	¼	1¼	⅛	H	11	2⅜	9½	1½	34	2	F	12	3¼	¼	4	12	3¼	¼	4	108¼	32¼
Concord AX–2	4	¼	1¼	⅛	H	11	2⅜	9½	1½	34	2	F	12	3¼	¼	4	12	3¼	¼	4	122¾	32¼
Concord B–3	4	¼	1¼	⅛	H	11	2⅜	9½	1½	34	2	F	13½	3½	¼	4	13½	3½	¼	4	122½	32¼
Concord BX–3	4	¼	1¼	⅛	H	11	2⅜	9½	1½	34	2	F	13½	3½	¼	4	13½	3½	¼	4	155 5/8	32¼
Corbitt E–1	3	⅛	1	⅛	....	8	2	14	2	38	5/8	V	19	2	⅛	2	19	2	⅛	2	105	34
Corbitt D–1½	3	⅛	1¼	⅛	....	8	2	14	2	38	5/8	V	45¼	2	¼	1	45¼	2	¼	1	120	34
Corbitt C–2	3	⅛	1¼	⅛	....	14	1¼	13	1¼	36	1¼	F	51½	2¼	¼	1	51½	2¼	¼	1	138	35
Corbitt B–2½	3	⅛	1¼	⅛	....	14	1¼	13	1¼	36	1¼	F	51½	2¼	¼	1	51½	2¼	¼	1	138	35
Corbitt AA–5	3	¼	1½	⅛	....	13	1¼	8	1¼	36	2	V	69¼	3	¼	1	69¼	3	¼	1	160	38
Corbitt A–3½	3	⅛	1¼	⅛	....	13	2	14	2	36	1¼	V	64	2½	¼	1	64	2½	¼	1	160	35
Cyclone A–3000	3	⅛	1	1	V	16	2	16	2	32½	1¼	F	21¼	2½	⅛	4	19¾	2¼	⅛	4	113	34
Dart S–1½	3	⅛	1¼	1 ⅛	H	11	2	8	1¾	36	1	F	19	1¾	⅛	4	19	1¾	⅛	4	112	34
Dart M–2½	4	¼	1¼	1 ⅛	H	11	2	13	1¼	35	2	F	10	2½	¼	2	19	3½	¼	4	124	34
Dart W–3½	4	¼	1½	2	H	11	2	12	1½	36	2	F	28	2¾	¼	4	28	2¾	¼	4	144	38
Day-Elder AS–1	3	⅛	1¼	1½	V	9	2	9½	2	40	5/8	V	19	2	¼	4	19	2	¼	4	108	35
Day-Elder B–1½	3	⅛	1¼	1½	V	9	2	9½	2	40	5/8	V	19	2	¼	4	19	2	¼	4	120	35
Day-Elder D–2	3	⅛	1¼	1½	V	4	4	9	1⅜	35	⅝	V	45	2	¼	2	45	2	¼	2	125	35
Day-Elder C–2½	3	¼	1¼	1½	V	10½	2	12	1⅜	36¾	2	F	52	2¼	¼	2	52	2¼	¼	2	123	35
Day-Elder F–3½	3	⅛	1½	1¾	V	6¾	1¾	12	1¼	35¼	1½	F	56½	2½	¼	2	56½	2½	¼	2	148	35
Day-Elder E–5	4	¼	1½	1¾	V	12½	2	10	1⅜	38½	1½	F	69	3	¼	2	69	3	¼	2	155	37
Dearborn BW–2	3	....	1	....	....	8¾	2	6	1¾	37	1	F	18	2½	⅛	2	18	1½	⅛	2	130	32
Dearborn F–1½	3	....	1	....	....	12	2	8	1¾	37	1	F	16½	2½	⅛	2	16½	1½	⅛	2	96½	34
Dearborn C–1	3	....	¾	....	....	....	....	....	....	....	....	....	38	2	⅛	1	38	2	⅛	1	107	32
Defiance B–1½	3	⅛	1	1	V	10	2	8	2	40¾	1¼	F	45	2½	⅛	1	43	2¼	⅛	1	116	34
Defiance C–2	3	⅛	1	1	V	10	2	8	2	40¾	1¼	F	54	2½	⅛	1	52½	2¼	⅛	1	116	34
Defiance D	3	⅛	1	1	V	10	2	8½	1¼	40¾	1¼	F	45	2½	⅛	1	43	2¼	⅛	1	120	34
Defiance E	3	⅛	1	1	V	10	2	8½	1¼	40¾	1¼	F	54	2½	⅛	1	52½	2¼	⅛	1	120	34
Denby 31–¾	3	⅛	1	1	....	6	2⅜	19	2⅜	38⅝	1¼	F	49	2½	⅛	2	47½	2¼	⅛	2	97 5/8	34
Denby 33–1½	3	⅛	1	1	....	9	2	12	2	41	¾	V	8½	4	¼	2	46½	1½	⅛	2	120	33¼
Denby 34	3	⅛	1	1	....	9	2	12	2	41	¾	V	53	3	⅛	2	50	2	⅛	2	127	34
Denby 35–2½	3	⅛	1¼	1¼	....	8	2	14¼	1¼	34¼	1¼	F	8½	4	¼	2	51	3	⅛	2	143¾	33¼
Denby 27–4	3	⅛	1¼	1¼	....	13	1¾	16¼	1¼	38½	1½	F	8½	4	¼	2	58	2½	⅛	2	140	34
Denby 210–5	3	⅛	1¼	1¼	....	13	1¾	16¼	1¼	38½	1½	F	8½	4	¼	2	89	2¼	⅛	2	140	34
Dependable Dispatch A-1¼	4	¼	1	⅛	V	14	2¼	15	1¼	37½	2	F	53¼	2¼	⅛	1	38¼	2¼	⅛	1	108	33½
Dependable C–2	4	¼	1	⅛	V	14	2¼	15	1¼	37½	2	F	53½	2½	⅛	1	38½	2½	⅛	1	121	33
Dependable D–2½	4	¼	1¼	⅛	V	10	2¼	11½	1¼	37½	2	F	53½	2½	⅛	1	38½	2½	⅛	1	140	33
Dependable E–3	4	¼	1¼	⅛	V	10	2¼	11½	1¼	37½	2	F	63	2½	⅛	1	49	2½	⅛	1	152	33
Dependable G–3½	4	¼	1¼	⅛	V	13	2	13	1¼	37½	2	F	63	2½	⅛	1	49	2½	⅛	1	170	33
Diamond T–O–3–1¼	3	⅛	1	1¼	V	9	1¼	6	1¼	35	2	F	48	2½	⅛	2	33	2½	⅛	2	100	34
Diamond T–FS&T–1½	3	⅛	1	1¼	V	9	1¼	6	1¼	35	2	F	11½	3¼	¼	4	11½	3½	¼	4	Opt	34
Diamond T–U–2–2½	3	⅛	1¼	1¼	V	9	1¼	6	1¼	35	2	F	13¼	3½	¼	4	13¼	3½	¼	4	Opt	34
Diamond TK–3½	3	¼	1¼	1½	V	10	1½	10	1½	35	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	Opt	37
Diamond T–EL–5	3	¼	1¼	1½	V	10	1½	10	1½	35	2	F	18	4	¼	4	17	4	¼	4	Opt	37
Diamond T–S–5	3	¼	1½	1¾	V	9	2	21	2	40⅜	2	F	18	4	¼	4	17	4	¼	4	Opt	37
Diehl A	3	....	1	1	....	....	....	....	....	....	....	....	28	2½	⅛	2	27	2	⅛	2	90	....
Dodge Brothers–¾	3	⅛	1⅛	¼	V	9	1½	7¼	1 ⅛	34½	1	R	19¼	2¼	⅛	4	14⅜	1¾	⅛	4	47⅜	38
D–Olt	3	⅛	1	⅛	H	18	2	18	2	36	1	F	54	3	⅛	2	42	3	⅛	2	240	34
Dorris K–4–2½	3	¼	1¼	1¼	V	2¼	1½	6¼	1¼	42⅞	2	F	13½	3½	¼	4	13½	3½	¼	4	142¾	34
Dorris K7–3½	3	¼	1¼	1¼	V	2¼	1½	6¼	1¼	42⅞	2	F	15¾	3¾	¼	4	15¾	3¾	¼	4	178½	36
Douglas GW–1½	3	....	1¼	¼	....	....	....	....	....	....	....	....	45	2½	⅛	2	44	2¼	⅛	2	118	31
Douglas G–1½	3	....	1¼	¼	....	....	....	....	....	....	....	....	46	2½	⅛	2	44	2¼	⅛	2	118	31
Douglas H–2	3	....	1¼	¼	....	....	....	....	....	....	....	....	55	2½	⅛	2	52	2¼	⅛	2	118	31
Douglas HW–2	3	....	1¼	¼	....	....	....	....	....	....	....	....	54	2½	⅛	2	42	2¼	⅛	2	118	31
Douglas I–3	3	....	1¼	¼	....	....	....	....	....	....	....	....	58	2½	⅛	2	44	2¼	⅛	2	132	31
Drake T–60	3	⅛	1¼	1½	V	9	1½	8	1¼	32	1¼	F	42¼	2½	⅛	1	37	2½	⅛	1	106	34
Duplex E–3½	3	¼	1¼	1	....	....	....	....	....	....	....	....	9½	2½	¼	2	5½	2½	¼	2	126	39⅜
Duplex A	....	....	1¼	1½	....	....	....	....	....	....	....	....	....	2	....	4	....	2	....	4	121	34
Eagle 100–2	4	⅛	1¼	1	V	14	2	16	1¼	33⅜	2	....	40½	3	⅛	1	46	2	⅛	1	Opt	36
Eugol 752–1	3	¼	1¾	⅛	V	8	1⅜	15½	1¼	32¾	1½	F	11	2½	¼	2	11	2½	¼	2	102	30
Fageol 1½–2	3	¼	1¼	1½	V	15½	1¼	11½	1¼	31	⅝	V	19¼	1¾	⅛	2	19¼	1¾	⅛	2	120	30
Fageol 2½–3	3	¼	1 ⅛	1 ⅛	V	10	1¼	14¾	1¼	34¾	1½	F	13¼	3½	¼	2	13¼	3¼	¼	2	141	34
Fageol 3½–4	3	¼	1⅝	2	V	9	1½	17½	1½	40½	1½	F	15½	3¾	¼	2	15½	3¾	¼	2	159½	37¾
Fageol 5–6	3	¼	1⅝	2	V	9	1½	17½	1½	40½	1½	F	18	4	¼	2	18	4	¼	2	161¼	37¾
Fargo O17, P18–2,P19–2, P20–2	3	⅛	....	1⅛	....	10	2	10	2	42	⅝	V	52	2	⅛	2	50½	2	⅛	2	132	33
Fargo R	3	⅛	....	1⅛	....	10	2	10	2	42	⅝	V	52	3	⅛	2	50½	2	⅛	2	132	33
Federal R–2	4	⅛	1	1 ⅛	V	15	1½	7	1½	35⅜	1	F	10	2½	¼	4	10	2½	¼	4	110	34
Federal SD–1½	4	⅛	1	1 ⅛	V	15	1½	7	1½	35⅝	1	F	10	3	¼	4	10	3	¼	4	112	34
Federal TE–2	3	⅛	1¼	1½	V	7	1¼	6	1½	32½	1	F	13	3½	¼	4	13	3½	¼	4	118	34
Federal UE–2½	3	⅛	1¼	1½	V	7	1¼	6	1½	32½	1	F	13	3½	¼	4	13	3½	¼	4	134	34
Federal WE–3½–4	3	⅛	1¼	1½	V	12½	1¼	9	1⅜	39	1½	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	154	38
Federal X–2–5–6	4	¼	1 ⅛	2	V	10	2	14	1	40⅞	1¾	F	17	4	¼	4	17	4	¼	4	154	38
Federal Light Duty	3	⅛	1¼	1½	V	7	1¼	6	1½	32½	1	F	13	3½	¼	4	13	3½	¼	4	86	34
Federal Heavy Duty	3	⅛	1¼	1½	V	12½	1¼	9	1⅜	39	1½	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	82	38
Ford T–1	3	¼	1.06	1	H	4	2	.....	1¾	27	1⅛	F	23⅜	1⅛	⅛	1	12	1⅛	⅛	2	60	23
Front Drive C–1½	4	⅛	1	1½	....	....	....	....	....	....	....	....	13	3	¼	2	15	3	¼	2	124	36
F. W. D. B–3	3	¼	1 ⅛	⅛	....	4	2	5	1½	40	1⅛	F	27	3½	¼	1	43	2¾	¼	2	136	36
Garford 15–1	4	⅛	1	....	V	....	....	....	....	34	1½	F	11	2½	¼	4	11	2½	¼	4	96	34
Garford 25B–1½	3	⅛	1¼	....	H	....	....	....	....	37	1	F	11¾	3¼	¼	4	11¾	3¼	¼	4	108	34
Garford 70H–2½	4	¼	1¼	....	V	....	....	....	....	34	2	F	13	3½	¼	4	13	3½	¼	4	121	34
Garford 77D–4	4	¼	1¼	....	V	....	....	....	....	39	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	144	36
Garford 68D–5	4	¼	1½	....	V	....	....	....	....	41	2	F	17¼	4	¼	4	17¼	4	¼	4	150	36
Garford 150–A–7½	4	¼	1½	....	V	....	....	....	....	41	2	F	10½	4	¼	2	21⅝	4	¼	4	150	36
Gary F–1–1½	4	¼	1¼	⅜	....	....	....	....	....	....	....	....	11	3	¼	2	11	3	¼	4	97⅜	34
Gary I–2	4	¼	1¼	⅜	....	....	....	....	....	....	....	....	12	3¼	¼	4	12	3¼	¼	4	120	34
Gary J–2½	4	¼	1¼	⅜	....	....	....	....	....	....	....	....	13½	3½	¼	4	13½	3½	¼	4	120	34

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Gary K–3½	4	¼	1¼	⅜									15	3¾	¼	4	15	3¾	¼	4	148	36¾
Gary M–5	4	¼	1½	⅜									18¼	4	¼	4	18¼	4	¼	4	168	39
Gersix K–2½	4	¼	1¼	1¼	H	12	2	14	1¼	36	2		20	2½	¼	4	47	2¼	¼	4	131	34
Gersix M–1½	4	¼	1¼	1¼	H	12	2	14	1¼	36	2		46	2	¼	2	46	2	¼	2	114	32
Gersix L–3½	4	¼	1¼	1¼	H	13½	2	16	1¼	36	2		56	2½	¼	2	56	2½	¼	2	144	36½
Giant 15A–1½	3	⅛	1			11½	2	10	2	36½	¾	V	11¼	3¼	¼	8	11¼	3¼	¼	8	116½	32
Giant 16–2½	3	⅛	1¼			7½	1¼	11½	1¼	36½	¾	F	13 1/16	3½	¼	8	13 1/16	3½	¼	8	140½	33
Giant 17–3½	3	⅛	1¼			9½	1¾	12	1¼	36	¾	V	15 5/16	3¾	¼	8	15 5/16	3¾	¼	8	183½	36
G.M.C. K–16	4	⅛	1¼	1⅛	V	8¾	1½	8 1/16	1½	35 5/16	1 1/16	V	49 5/16	2⅛	1/16	2	47	2¼	1/16	2	89	34
G.M.C. K–20	4	¼	1¼	1⅛	V	10	1¾	9½	1¾	37 1/16	1 1/16	V	49 5/16	2⅛	1/16	2	47	2¼	1/16	2	191	33
G.M.C. K–41	4	¼	1¼	1⅛	V	10	1¾	9½	1¾	37 1/16	1 1/16	V	13	3½	¼	4	13	3½	¼	4	Opt	33
G.M.C. K–71	4	¼	1¼	1⅛	V	11¾	1¾	9½	1¾	37 1/16	1 1/16	V	15 1/16	3¾	¼	4	15 1/16	3¾	¼	4	Opt	38
G.M.C. K–101	4	¼	1¼	1⅛	V	11¾	1¾	9½	1¾	37 1/16	1 1/16	V	17¾	4	¼	4	17¾	4	¼	4	Opt	38
Gramm-Pioneer 10 Speed	3	⅛	1	1½	V	12	2¼	14½	2¼	29	1	F	48	2	⅛	2	26	2	⅛	1	97	30 1/16
Gramm-Pioneer 15–1½	3	⅛	1	1½	V	10¼	2	6	2	39	1¼	F	48½	2	⅛	2	45 7/16	1½	⅛	2	120	32
Gramm-Pioneer 65–1½	3	⅛	1	1½	V	10¼	2	6	2	39	1¼	F	19¾	1¾	⅛	4	19¾	1¾	⅛	4	120	32
Gramm-Pioneer 20–2	3	⅛	1¼	1½	V	4½	1½	12	1½	32	2	F	45	2	⅛	4	45	2	⅛	4	126	32
Gramm-Pioneer 30–3	3	⅛	1¼	1½	V	11	11½	9	1½	33¾	2	F	22¾	2¼	¼	4	22¾	2¼	¼	4	129¾	36
Gramm-Pioneer 75P–3½	3	⅛	1¼	1½	V								22¾	2¼	¼	4	22¾	2¼	¼	4	129¾	36
Gramm–Pioneer 40–4	3	⅛	1¼	1½	V	11	1½	9	1½	33¾	2	F	28¾	2¾	¼	4	28¾	2¾	¼	4	144	36
Gramm–Pioneer 50–5–6	3	⅛	1½	1¾	V	23¼	2	13¾	1½	40¾	2	F	32M	2¾	¼	4	32 11/16	2¾	¼	4	132	36
G. W. W	3	⅛	1¼	1¾	V	12	1¾	11	1¾	37	2	F	49	2½	¼	2	47	1½	1/16	2	89	32
Hall 2-Worm–2½	3	⅛				8	1¼	12½	1¼	32	1¼	F	11½	3	¼	4	11½	3	¼	4	144	38
Hall 3½-Worm	3	⅛				12¼	1¾	15½	1¾	38½	1½	F	15	3¾	¼	4	15	3¾	¼	4	180	39
Hall 5-Worm	3	⅛				12½	1¾	15½	1¾	38½	1½	F	18	4	¼	4	18	4	¼	4	144	39
Hall 7-Chain	3	⅛				12½	1¾	15½	1¾	38⅛	1½	F	18	4	¼	4	18	4	¼	4	144	39
Harvey WOA–2	4	¼	1¾	2	V	11	2	14	1¾	35 5/16	2	F	45	2	¼	2	45	2	¼	2	136	32
Harvey WFA–2½	4	¼	1¾	2	V	11	2	14	1¼	35 5/16	2	F	50	2¼	¼	2	50	2¼	¼	2	136	32
Harvey WHA–3½	4	¼	2	2	V	12	2	14	1¼	35 5/16	2	F	56½	2½	¼	2	56½	2½	¼	2	144	35
Hendrickson N–2½	3	¼	1¼		⅛								12	3½	⅛	4	12	3½	⅛	4	Opt	32½
Hendrickson M–3½	3	¼	1¼		⅛								16	3¾	⅛	4	16	3¾	⅛	4	Opt	36
Hendrickson K–5	3	¼	1½		⅛								18	4	⅛	4	18	4	⅛	4	Opt	38
Higrade A18–1	3	⅛	1	1	V	9	2	7	2	32	½	R	12	1½	⅛	2	12	1½	⅛	2	85	32
Higrade B20–1½	3	⅛	1 1/16	1⅛	V	9	2	7	2	32	½	R	18	2	⅛	2	18	2	⅛	2	100	32
Hurlburt A1½–2	3	⅛	1¼	1									22	2	⅛	2	22	2	⅛	2	132	35½
Hurlburt B2½	3	⅛	1¼	1									24	2½	⅛	2	23	2½	⅛	2	154	34
Hurlburt C3½–4	3	⅛	1½	1¼									26	3	⅛	2	25	3	⅛	2	144½	34
Hurlburt D5–5½	3	¼	1½	1¼									28	3	⅛	2	27	3	⅛	2	144½	34
Huron–Erie 1½	4	⅛	1¼	1 1/16									15	3	⅛	2	50	2	⅛	2	121	33
Huron-Michigan 2½	4	⅛	1¼	1 1/16									15	3	¼	2	50	2½	⅛	2	145	33
Indiana 12–1½	3	⅛	1			17	1¼	14	1¼	38½	1		17½	2	⅛	4	17½	2	⅛	4	108	32
Indiana 20–2	3	¼	1¼			6	1¼	13	1¼	26 5/16	1½		44	2	¼	2	44	2	¼	2	126	33
Indiana 25–2½	3	¼	1¼			6	1¼	13	1¼	26 5/16	1½		51	2¼	¼	2	51	2¼	¼	2	138	33
Indiana 35–3½	3	¼	1¼			6	1¼	13	1¼	26 5/16	1½		56	2½	¼	2	56	2½	¼	2	144	34½
Indiana 51–5	3	¼	1½			10	1½	17½	1½	26 5/16	1½		68	3	¼	2	68	3	¼	2	156	37½
International S—2000 lbs.-Speed Tr	3	¼	1¼	1¼	V	9¾	2¼	17¾	2¼	30¼	1	F	38	2	⅛	2	36	2	⅛	2	90	34
International 21–2000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	75 11/16	34
International 31–3000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	106½	34
International 41–4000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	50⅝	2¼	⅛	2	50⅝	2¼	⅛	2	111 1/16	32¼
International 52–School Bus	4	¼	1¼	1¾	V	9	2¼	14½	2													34
International 61–6000 lbs.	4	¼	1¼	1¾	V	9	2¼	14½	2				50⅝	2¼	1/16	2	50⅝	2¼	1/16	2	118 11/16	34
International 101–10,000	4	¼	1¼	1¾	V	9	2¼	14½	2				73 1/16	2½	1/16	2	73 1/16	2½	1/16	2	147 5/16	34
Jackson B–3½	3	¼	1¼	1½		11				32½	1¼	F	58½	3½	¼	2					150	36
Kalamazoo G–1	3	¼	2 1/16	1 1/16		15½	1½	8	1½	40	1½	F	50	2½	1/16	1	34	2½	1/16	1	120	32½
Kalamazoo LG	3	¼	2 1/16	1 1/16		6	1½	16	1¾	39	1½	F	50	2½	1/16	1	34	2½	1/16	1	120	32½
Kalamazoo NH	3	¼	2 1/16	1 1/16		20	1¾	19½	1½	42	2	F	52	2¼	⅛	1	52	2¼	⅛	1	144	33
Kalamazoo HD	3	¼	2 1/16	1 1/16		20	1¾	19½	1½	42	2	F	52	2¼	⅛	1	52	2¼	⅛	1	120	33
Kalamazoo SK	3	¼	2 1/16	1 1/16		20	1¾	19½	1½	42	2	F	57	2½	⅛	1	57	2½	⅛	1	152	36
Kalamazoo OK	3	¼	2 1/16	1 1/16		20	1¾	19½	1½	42	2	F	68	3	¼	1	68	3	¼	2	152	36
Kearns H–1	3	⅛	1		⅛	16	2	16	2	33	1	F	42	2	⅛	1	21	2	⅛	2	90	34
Kearns N–2	3	⅛	1		⅛	18	2	18	2	33	1	F	45	2½	1/16	1	22	2¼	1/16	2	120	34
Kelly-Springfield K31–1½	4	¼	1		⅛	7	1½	13	1½	54½	1	V	16¾	1⅞	⅛	4	16¾	1⅞	⅛	4	138	34
Kelly-Springfield K34–1½	4	¼	1		⅛	7	1½	13	1½	54½	1	V	17⅜	1⅞	⅛	4	17⅜	1⅞	⅛	4	138	34
Kelly-Springfield K35–2½	4	¼	1		⅛	7	1½	13	1½	55½	1	V	16¾	1⅞	⅛	4	16¾	1⅞	⅛	4	138	34
Kelly-Springfield K38–2½	4	¼	1		⅛	7	1½	13	1½	55½	1	V	17⅜	1⅞	⅛	4	17⅜	1⅞	⅛	4	138	34
Kelly-Springfield K40–3½	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	63⅝	1	V	21	2⅞	1/16	4	21	2⅞	1/16	4	145	38
Kelly-Springfield K41–3½–5	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	60⅝	1	V	3 1/16	4½	¼	12	58	2½	1/16	2	144	36
Kelly-Springfield K42–3½	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	60⅝	1	V	27½	2¾	¼	4	27½	2¾	¼	4	144	36
Kelly-Springfield K50–5	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	63⅝	1	V	21	2⅞	1/16	4	21	2⅞	1/16	4	145	38
Kelly-Springfield K60–6	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	63⅝	1	V	21	2⅞	1/16	4	21	2⅞	1/16	4	145	38
Kelly-Springfield K61–5 to 7	4	¼	1¼		⅛	5 1/16	1⅝	24	1½	60⅝	1	V	3 1/16	4½	¼	12	58	2½	1/16	2	142	36
Keystone 40–2	3	¼	1		⅛	8	2⅛	8	2⅛	38	1	F	50½	3	¼	1	46¾	2	⅛	1	124	33
Kimball AB–2	3	¼	1¼	1¾	V	6	1½			39	2	F	45	2	¼	2	45	2	¼	2	135	34
Kimball AC–2½	3	¼	1¼	1¾	V	6	1½			39	2	F	22½	2¼	¼	4	22½	2¼	¼	4	152	34
Kimball AK3	3	¼	1¼	1¾	V	6	1½			39	2	F	22½	2¼	¼	4	22½	2¼	¼	4	152	34
Kimball AE–4	3	¼	1¼	1¾	V	9	1¾			42	2	F	56	2½	¼	2	56	2½	¼	2	171	36
Kimball AF–5	3	¼	1½	1¾	V	9	1¾			42	2	F	69	3	¼	2	69	3	¼	2	171	36
Kissel 1 Ton	3	¼		1¼		12¼	1¾	10	1½	46¾	2	F	11	3	¼	4	11	3	¼	4	101¼	34
Kissel-Utility 1½	3	⅛		1¼		12¼	1¾	10	1½	46¾	2	F	19	2	⅛	4	19	2	⅛	4	120	34
Kissel-Freighter 2	3	⅛		1¼		12¼	1¾	10	1½	49	2	F	14	3½	¼	4	14	3½	¼	4	144	34
Kissel-Heavy-Duty–3½	3	⅛		1¼		13¾	1¾	10	1½	52¼	2	F	56	2½	¼	2	56	2½	¼	2	156	36
Kissel-Goliath 5	3	⅛		1¼						55	2	F	56	2½	¼	2	56	2½	¼	2	168	36
Kleiber 1	3	⅛	1¼	1¾		13	1½	16	1¼	36	¾		12	3¼	¼	4	12	3¼	¼	4	120	34
Kleiber 1½	3	⅛	1¼	1¾		13	1½	16	1¼	38	1¼		45	3¼	¼	4	12	3¼	¼	2	132	34
Kleiber 2	3	⅛	1¼	1¾		13	1½	16	1¼	40	1¼		13½	3½	¼	4	13½	3½	¼	4	144	34
Kleiber 2½	3	⅛	1¼	1¾		13	1¾	16	1¼	40	1¼		52	3½	¼	4	13½	3½	¼	2	150	34
Kleiber 3½	3	¼	1¼	1¾		13	1¾	16	1¼	40	1¼		16	3¾	¼	4	16	3¾	¼	4	156	38
Kleiber 5	4	¼	1½	1¾		13	1¾	16	1¼	43	1¼		18	4	¼	4	18	4	¼	4	168	38
Koehler D–1½	3	⅛	1	1¼	V	9¼	2	5 1/16	1¼	37½	1¼		40	1¾	¼	2	40	1¾	¼	2	113¼	34
Koehler M–2½	4	⅛	1¼	1¼	V	5¼	1⅝	5¼	1¼	40¼	1¼		48	2	⅛	4	48	2	⅛	4	141¾	34
Koehler MCS–2½	4	⅛	1¼	1¼	V	5¼	1⅝	5¼	1¼	40¼	1¼		13	3½	¼	4	13	3½	¼	4	129¾	34
Koehler F–3½	4	⅛	1¼	1¼	V	9	1⅝	5¼	1¼	40¼	1¼		13	3½	¼	4	13	3½	¼	4	139½	34
Koehler MT–5—Tractor 5	4	⅛	1¼	1¼	V	5¼	1⅝	5¼	1¼	40¼	1¼		15½	3¾	¼	4	15½	3¾	¼	4		34
Lange B	4	⅛	1	1⅛	V	3½	2¼	11	2	36½	⅞		13	3½	¼	4	13	3½	¼	4	114	37
Lange E–2½	3	⅛	1	1⅛	V	3½	2¼	15½	1½	42	1½	F	30	2	⅛	2	18	3	⅛	4	138	33
Larrabee X2–1 Ton	3	⅛	1	1½	V	9	1½	14	1¼	34	1¼	F	18	3½	¼	4	18	3½	¼	4	138	33
Larrabee J4–1½–2¼ Ton	4	⅛	1	1½	V	6	1¼	10	1½	41	1½	F	48	2	⅛	2	48	2	⅛	2	108	34
Larrabee K4–2½–3½ Ton	4	¼	1¼	1¾	V	6½	1½	11	1½	48	1½	F	24	2	¼	4	24	2	¼	4	108	34
Larrabee L4–3½–J	4	¼	1¼	1¾	V	6	1½	11	1½	48	1½	F	27	2¼	¼	4	27	2¼	¼	4	Opt	34
													60	2½	¼	2	60	2½	¼	2	Opt	36

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Larrabee W–5–7	4	1/4	1 1/2	2 1/4	V	8 1/2	2	17 1/2	2	44 1/2	2	F	72	3	1/4	2	72	3	1/4	2	152	36
Luedinghaus K2	3	1/4	1 1/4	1 11/16	....	9	1 1/4	5	1 1/4	.....	1 1/2	F	53.4	2 1/2	1/4	2	38 1/2	2 1/2	1/4	2	120	34
Luedinghaus K2–LS	3	1/4	1 1/4	1 11/16	....	9	1 1/4	5	1 1/4	.....	1 1/2	F	53.4	2 1/2	1/4	2	38 1/2	2 1/2	1/4	2	145 1/2	34
Maccar L	3	11/16	1 1/4	1 5/8	V	3 1/4	1 1/2	10	1 1/4	30 3/4	3/4	F	11 5/8	3 1/4	1/4	4	11 5/8	3 1/4	1/4	4	128 1/8	34
Maccar HA	4	1/4	1 1/4	1 5/8	V	11 1/4	1 1/2	17	1 1/2	41 1/2	1 1/2	F	13 11/16	3 1/2	1/4	4	13 11/16	3 1/2	1/4	4	143 5/8	34
Maccar H 2	4	1/4	1 1/4	1 5/8	V	9 1/2	1 1/2	15 1/2	1 1/2	41 1/2	1 1/2	F	13 11/16	3 1/2	1/4	4	13 11/16	3 1/2	1/4	4	141 1/2	34
Maccar M–3	4	1/4	1 1/4	1 5/8	V	11 1/4	1 1/2	15 1/2	1 1/2	41 1/2	1 1/2	F	14 3/4	3 3/4	1/4	4	14 3/4	3 3/4	1/4	4	155 1/2	34
Maccar G	4	1/4	1 1/2	1 7/8	V	10 1/2	2	20 1/2	2	40 3/4	2	F	18	4	1/4	4	18	4	1/4	4	166 5/8	37 1/2
MacDonald A–7 1/2	4	1/4	1 1/2	....	V	12	2	21	1 1/4	35	2	F	70	3	1/4	1	34	3	1/4	1	.....	.....
Mack AB–1 1/2, 2, 2 1/2–Ton–Chain	3	11/16	1 1/2	1 1/2	V	9 1/2	1 1/2	4 3/4	1 1/2	33	1 1/2	F	12 1/4	4	1/4	2	16 1/2	2 1/2	1/4	4	Opt	33 1/4
Mack Dual Reduction–1 1/2–2,2 1/2	3	11/16	1 1/2	1 1/2	V	9 1/2	1 1/2	4 3/4	1 1/2	33	1 1/2	F	18 3/4	3 1/2	1/4	4	12	6	1/4	2	Opt	33 1/4
Mack AB–Tractor 5 Ton	3	11/16	1 1/2	1 1/2	V	9 1/2	1 1/2	4 3/4	1 1/2	33	1 1/2	F	12 1/4	4	1/4	2	16 1/2	2 1/2	1/4	4	77	33 1/2
Mack AC–3 1/2 to 7 1/2 Ton	3	1/4	1 1/2	1 1/2	V	5 3/4	2 1/4	4 3/4	1 1/2	96	1	V	16 1/2	3	1/4	4	20 1/2	3 1/2	1/4	4	Opt	37 1/2
Mack AC–Tractor 7 to 15 Ton	3	1/4	1 1/2	1 1/2	V	5 3/4	2 1/4	4 3/4	1 1/2	96	1	V	16 1/2	3	1/4	4	20 1/2	3 1/2	1/4	4	87	37 1/2
Master JI–1 1/2	4	1/4	1 1/4	2	H	13 1/2	2	12 1/2	1 1/4	30 1/2	1	F	74 1/2	2 1/2	1/4	1	74 1/2	2 1/4	1/4	1	117 3/4	34 1/2
Master JW–1 1/2	4	1/4	1 1/4	11/16	V	13 1/2	12	12 1/2	1 1/4	30 1/2	1	F	12	3 1/2	1/4	2	12	3 1/2	1/4	2	117 3/4	34 1/2
Master M–2 1/2	4	1/4	1 1/4	11/16	V	13 1/2	2	12 1/2	1 1/4	33	1 1/4	F	74	2 1/2	1/8	1	74 1/2	2 1/4	1/4	1	117 3/4	34
Master O 2 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	11 1/2	1 1/4	33	1 1/4	F	75 1/2	2 1/2	1/8	1	74 1/2	2 1/4	1/4	1	156 5/8	34
Master W–2 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	13 1/4	3 1/2	1/4	2	13 1/4	3 1/2	1/4	2	117 3/8	34
Master WL–2 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	13 1/4	3 1/2	1/4	2	13 1/4	3 1/2	1/4	2	156 5/8	34
Master D–2 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 5/8	4 1/2	1/8	2	54 1/16	3	1/8	2	117 3/8	34
Master DL–2 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 5/8	4 1/2	1/8	2	54 1/16	3	1/8	2	156 5/8	34
Master T–6 Tractor	4	1/4	1 1/4	1 11/16	V	13 1/2	2	12 1/2	1 1/4	33	1 1/2	F	74 1/2	2 1/2	1/8	1	74 1/2	2 1/4	1/4	1	72 1/8	34
Master A–3 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	15	1 1/4	35	2	F	16	3 3/4	1/4	2	16	3 3/4	1/4	2	147 3/4	36 1/4
Master AL–3 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	15	1 1/4	35	2	F	16	3 3/4	1/4	2	16	3 3/4	1/4	2	183 3/4	36 1/4
Master E–3 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	15	1 1/4	35	2	F	11	6	1/4	2	25	4	1/4	4	147 3/4	36 1/4
Master EL–3 1/2	4	1/4	1 1/4	1 11/16	V	13 1/2	2	15	1 1/4	35	2	F	11	6	1/4	2	25	4	1/4	4	183 3/4	36 1/4
Master B–5	4	1/4	1 1/2	1 11/16	V	13 1/2	2	15	1 1/2	37	2	F	18	4	1/4	2	18	4	1/4	2	162 1/2	39
Master BL–5	4	1/4	1 1/2	1 11/16	V	13 1/2	2	15	1 1/2	37	2	F	18	4	1/4	2	18	4	1/4	2	186 7/8	39
Master F–5	4	1/4	1 1/2	1 11/16	V	13 1/2	2	15	1 1/2	37	2	F	11	6	1/4	2	25	4	1/4	4	162 7/8	39
Master FL–5	4	1/4	1 1/2	1 11/16	V	13 1/2	2	15	1 1/2	37	2	F	11	6	1/4	2	25	4	1/4	4	186 7/8	39
Master DT–6 Tractor	4	1/4	1 1/4	2	H	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 5/8	4 1/2	1/8	2	54 1/16	3	1/8	2	72 1/8	43
Maxwell 1 1/2	3	11/16	1	1	V	6 1/4	2 1/8	7 3/4	2 1/8	44 1/2	1 1/2	....	16	1 3/4	1/8	4	16	1 3/4	1/8	4	102	36
Menominee HT–1	3	1/4	1	1 1/2	....	.....	.....	.....	.....	.....	.....	....	12	3 1/4	1/4	8	.....	.....	.....	.....	104	32
Menominee H–1 1/2	3	1/4	1 1/4	1 3/4	....	.....	.....	.....	.....	.....	.....	....	13 1/2	3 1/2	1/4	8	.....	.....	.....	.....	122	32
Menominee D–2	3	1/4	1 1/4	1 3/4	....	.....	.....	.....	.....	.....	.....	....	13 1/2	3 1/2	1/4	8	.....	.....	.....	.....	146	32
Menominee G–3 1/2	3	1/4	1 1/2	2	....	.....	.....	.....	.....	.....	.....	....	16	3 1/2	1/4	8	.....	.....	.....	.....	149	36
Menominee J–5	3	1/4	1 1/2	2	....	.....	.....	.....	.....	.....	.....	....	18 1/2	4	1/4	8	.....	.....	.....	.....	149	38
Menominee HT–1	3	1/4	1	1 1/2	....	9 1/4	1 3/4	10 1/2	1 1/4	33 3/4	1 1/4	F	47 1/16	2 1/2	1/8	2	33 1/4	2 1/2	1/8	2	102 3/4	32
Menominee H–1	3	1/4	1	1 3/4	....	9 1/4	1 3/4	10 1/2	1 1/4	33 3/4	1 1/4	F	47 1/16	2 1/2	1/8	2	33 1/4	2 1/2	1/8	2	124	32
Menominee D–2	3	1/4	1 1/4	1 3/4	....	3	1 3/4	3	1 1/2	37 3/4	2	F	57 1/2	2 1/2	1/8	2	42 1/2	2 1/2	1/8	2	131 1/2	32
Menominee G–3 1/2	3	1/4	1 1/4	1 3/4	....	3	1 3/4	3	1 1/2	37 3/4	2	F	57 1/2	2 1/2	1/8	2	42 1/2	2 1/2	1/8	2	149	36
Menominee J–5	3	1/4	1 1/2	2	....	3	1 3/4	3	1 3/4	40 3/4	2	F	69 1/16	3 1/2	1/8	2	52	2 1/2	1/8	2	149	38
Menominee G–3 1/2	3	1/4	1 1/4	1 3/4	....	3	1 3/4	3	1 3/4	37 3/4	2	F	15 5/8	3 3/4	1/4	4	15 5/16	3 3/4	1/4	4	149	36
Menominee J–3–5	3	1/4	1 1/2	2	....	3	1 3/4	3	1 3/4	40 3/4	2	F	18	4	1/4	4	18	4	1/4	4	149	38
Moline 10	3	11/16	....	1 1/4	H	10 1/2	2 1/4	4 1/2	2 1/4	.....	2	F	21	2 1/2	1/8	2	20	2	1/8	2	108	32
Moreland BX–1 1/2	3	11/16	1 1/4	1 1/2	H	8	1 1/2	11 1/4	1 1/2	42	1 1/2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	108	34
Moreland EX–2	3	11/16	1 1/4	1 1/2	H	9	1 1/2	13	1 1/2	42	1 1/2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	132	34
Moreland AX–3	3	11/16	1 1/4	1 1/2	H	9	1 1/2	13	1 1/2	42	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	174	38
Moreland RX–5	3	11/16	1 1/4	1 1/2	H	9	2	19	1 1/2	42	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	192	.....
Napoleon 9–1	3	11/16	1	1 1/16	H	6 1/2	2 1/4	14	2 1/4	39	1	F	21	4	1/8	1	30	2 1/2	1/8	1	100 3/4	35 3/4
Napoleon 11–1 1/2	3	11/16	1	1 1/16	H	6 1/2	2 1/4	14	2 1/4	39	1	F	21	4	1/8	1	30	2 1/2	1/8	1	100 3/4	35 3/4
Nash 2018–1–1 1/2	4	1/4	1 1/4	1 1/4	....	3	1 1/2	7 3/4	1 1/4	36	1	F	49 1/8	2	1/8	2	20 1/8	2 1/2	1/8	1	104 1/2	30 1/2
Nash 3018–2–2 1/2	4	1/4	1 1/4	1 1/4	....	3	1 1/2	.....	.....	44	1	F	50 5/8	3	1/8	2	20 1/8	2 1/2	1/8	1	118 1/4	31 5/8
Nash 4017–2–2 1/2	2	1/4	1 1/4	1 1/4	....	7	1 1/2	.....	.....	44	2	F	49 1/4	2 1/2	1/4	4	25 1/16	2 1/2	1/4	1	117 1/8	38 1/8
Nelson & LeMoon G–2	4	1/4	1 1/4	1 1/16	....	.....	.....	.....	.....	.....	.....	....	12	3 1/4	1/4	2	12	3 1/4	1/4	2	Opt	.....
Nelson & LeMoon G–3	4	1/4	1 1/4	1 1/16	....	.....	.....	.....	.....	.....	.....	....	12	3 1/4	1/4	2	12	3 1/4	1/4	2	Opt	.....
Nelson & LeMoon G–4	4	1/4	1 1/4	1 1/16	....	.....	.....	.....	.....	.....	.....	....	16 1/2	3 3/4	1/4	2	16 1/2	3 3/4	1/4	2	Opt	.....
Nelson & LeMoon G–5	4	1/4	1 1/2	1 1/16	....	.....	.....	.....	.....	.....	.....	....	18	4	1/4	2	18	4	1/4	2	Opt	.....
Neteo DK–2	3	11/16	1 1/4	1 1/16	V	12	1 1/2	16	1 1/4	40 11/16	1 1/2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	Opt	34 1/4
Neteo HL–2 1/2–3	3	11/16	1 1/2	1 1/16	V	13	1 1/2	16	1 1/4	41 1/4	1 1/2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	139	34 1/4
Niles E–2	3	11/16	1 3/4	1 3/4	V	8	1 1/4	11	1 1/4	30	3/4	F	12	3 1/4	1/4	2	12	3 1/4	1/4	2	147	56
Noble A21–1 1/4	4	11/16	1	1 1/16	....	10	1 3/4	12 1/2	1 1/4	33 1/2	1 1/2	F	19	2	1/4	4	19	2	1/4	2	102	34
Noble B31–1 1/2	4	11/16	1	1 1/16	....	7	1 1/8	16 1/2	1 1/4	34 1/4	1 1/8	F	43	2	1/4	2	43	2	1/4	2	126	34
Noble D51–2 1/2	4	1/4	1 1/4	1 1/16	....	9	2	12	1 1/4	34 1/4	1 1/8	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	.....	34
Noble E71–3 1/2	4	1/4	1 1/4	1 1/16	....	14 1/2	2	16	1 1/4	34 1/4	1 1/8	F	57	2 1/2	1/4	2	57	2 1/2	1/4	2	.....	36
Northway B–2	3	11/16	1 1/16	1 3/4	V	5 1/4	2 1/4	13 7/16	1 1/4	46 22/32	5/8	V	50 1/2	2 1/4	1/4	2	50 1/2	2 1/4	1/4	2	133	33
Northway B–3	3	11/16	1 1/16	1 3/4	V	5 1/4	2 1/4	13 7/16	1 1/4	46 22/32	5/8	V	54	2 1/2	1/4	2	54	2 1/2	1/4	2	173	34 5/16
Norwalk 25E–1	3	11/16	1	1 1/16	V	9	2 1/4	19	2 1/4	29	3/4	F	16 1/2	2 1/4	1/8	2	16 1/16	1 1/2	1/8	2	100	36
Norwalk 35E–1 1/2	3	11/16	1	1 1/16	V	9	2 1/4	19	2 1/4	29	3/4	F	16 1/2	2 1/4	1/8	2	16 1/2	1 1/2	1/8	2	124	34
Norwalk 35E Spec.–1 1/2	3	11/16	1	1 1/16	V	11	2	18	1 1/2	36	2	F	19	2	1/4	2	19	2	1/4	2	124	34
Ogden A–1	3	11/16	1	1	V	12	2	6	2	44	3/4	F	11	2 1/2	1/4	4	11	2 1/2	1/4	4	108	33 1/4
Ogden D–1 1/2	3	11/16	1	1	H	13	2	12	2	44	3/4	V	10 11/32	3	1/4	4	10 11/32	3	1/4	4	120	33 1/4
Ogden E–2 1/2	3	11/16	1 1/4	2	H	10	1 1/16	14	1 1/16	30	1 1/4	F	52	2 1/4	1/4	1	52	2 1/4	1/4	1	144	33 1/4
Ogden F–3 1/2	3	11/16	1 1/4	2	H	11	1 1/2	16	1 1/2	36	1 1/2	F	15 5/8	3 3/4	1/4	4	10 3/16	3 3/4	1/4	4	168	33 1/4
Ogden G–5	3	1/4	1 1/2	3	....	9	2	18	2	40	2	F	11	6	1/4	2	25	4	1/4	4	168	33 1/4
O. K.–1 1/2	4	1/4	1 1/4	1 11/16	V	12	2	13 1/2	1 1/4	36	2	F	53	2 1/2	1/8	2	38	2 1/2	1/8	2	117	34
O. K.–2 1/2	4	1/4	1 1/4	1 11/16	V	12	2	13 1/2	1 1/4	36	2	F	62	2 1/2	1/8	2	48	2 1/2	1/8	2	121	35
O. K.–3 1/2	4	1/4	1 1/4	1 11/16	V	12	2	13 1/2	1 1/4	38	2	F	62	2 1/2	1/8	2	48	2 1/2	1/8	2	133	34
Old Reliable A–1 1/2	3	1/4	1 1/4	1 1/4	....	.....	.....	.....	.....	.....	.....	....	48	2 1/2	1/4	1	48	2 1/2	1/4	1	105	32
Old Reliable B–2 1/2	3	1/4	1 1/4	1 1/4	....	.....	.....	.....	.....	.....	.....	....	54	2	1/4	1	54	2	1/4	1	144	32
Old Reliable C–3 1/2	3	1/4	1 1/4	1 1/4	....	.....	.....	.....	.....	.....	.....	....	60	2 1/2	1/4	1	60	2 1/2	1/4	1	150	32
Old Reliable D–5	3	1/4	1 1/2	1 1/2	....	.....	.....	.....	.....	.....	.....	....	72	3	1/4	1	72	3	1/4	1	156	34
Old Reliable K. L. M.–7	3	1/4	1 1/2	1 1/2	....	.....	.....	.....	.....	.....	.....	....	54	3 1/2	1/4	1	60	4	1/4	1	158	36
Oldsmobile T–1	3	11/16	1 1/16	1 3/16	V	5	1 1/4	11	1 1/4	37 11/32	3/4	V	42 1/4	2	1/8	1	41 1/16	2	1/8	1	92 5/8	34
Olympic 2 1/2	4	1/4	1 1/4	1 1/2	V	13	2	12	1 1/4	34	2	F	13 1/2	3 1/2	1/4	2	13 1/2	3 1/2	1/4	2	Opt	32 1/2
Oneida B9–1 1/2	3	11/16	1 1/4	1 1/2	H	9 1/2	1 1/4	9 1/2	1 1/4	38 1/2	2	F	48	2 1/2	1/8	2	34	2 1/2	1/8	2	114	34
Oneida C9–2 1/2	3	11/16	1 1/4	1 1/2	H	9 1/4	1 1/4	9 1/2	1 1/4	38 1/2	2	F	58	2 1/2	1/8	2	43	2 1/2	1/8	2	138	34
Oneida D9–3 1/2	3	1/4	1 1/4	1 1/2	H	7	1 1/2	9 1/2	1 1/2	40	2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	157	36
Oneida E9–5	3	1/4	1 1/4	1 1/2	H	7 1/2	1 3/4	9 1/2	1 1/2	40	2	F	18	4	1/8	4	18	4	1/8	4	177	38
Packard EC	3	1/4	1 5/8	1 3/4	V	6 1/4	1 1/2	10 5/8	1 1/2	41 1/16	5/8	V	7 11/32	4 3/4	1/4	2	14	2	1/8	4	132	31 1/4
Packard ED	3	1/4	1 5/8	1 3/4	V	6 1/4	1 1/2	10 5/8	1 1/2	43 1/16	5/8	V	9 1/16	4 3/4	1/4	2	17	3	1/8	4	144	39
Packard EF	3	1/4	1 5/8	1 3/4	V	6 1/4	1 1/2	10 5/8	1 1/2	43 1/16	5/8	V	9 1/16	6 1/2	1/4	2	18 3/4	3 1/2	1/8	4	144	39
Packard EX	3	1/4	1 5/8	1 3/4	V	6 1/4	1 1/2	10 5/8	1 1/2	41 1/16	5/8	V	7 1/16	4 3/4	1/4	2	14	2	1/8	4	132	31 1/4
Paige 54–20–2 1/2	3	1/4	....	1 1/4	....	10 1/2	1 1/2	10 1/2	1 1/2	37 5/8	1 1/4	F	49 1/8	2 1/4	1/4	2	49 5/16	2 1/4	1/4	2	126	33
Paige 51–18–3 1/2	3	1/4	....	1 1/4	....	13	1 1/2	13	1 1/2	37 5/8	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	144	35
Paige 52–19–1 1/2	3	11/16	....	1 1/4	....	8	1 1/4	12	1 1/4	36	2	F	11 1/16	3 1/4	1/4	4	11 1/16	3 1/4	1/4	4	126	33
Parker C22–1	3	1/4	1	1 1/4	V	16	1 1/4	12 1/2	1 1/4	39	1 1/2	F	10 1/2	3	1/4	4	10 1/2	3	1/4	4	95	33
Parker G1–2 1/2	3	1/4	1 1/4	1 1/2	V	19	1 3/4	16	1 1/2	38	2	F	10 3/4	5	1/4	2	19	2 1/2	1/4	4	127	33

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Parker J20–3½	3	¼	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	3½	¼	4	139½	33
Parker M20–5	3	¼	1½	1¾	V	14	1¾	18	1¾	40½	2	F	10¾	5	¼	2	24½	4	¼	4	145	37
Patriot Revere–1	3	⅛	1⅛	⅜	H	8	2	9	2	39	1¼	F	40½	1¾	⅛	1	40½	1¾	⅛	1	93	66
Patriot Lincoln Special–2	3	⅛	1⅛	⅜	V	6	1¼	8	1½	37	1¾	F	40½	1¾	⅛	1	40½	1¾	⅛	1	113	67½
Patriot Washington Special–3	3	¼	1⅛	⅜	V	11	1½	10	2	39	2	F	58	2½	¼	1	43	2½	¼	1	150	67½
Pierce Arrow–2–X–5	3	⅛	1⅛	1⅝	V	16⅜	2⅜	14¼	2⅛	43½	1½	F	22¼	2¼	¼	4	22¼	2½	¼	4	125 ⅛	34½
Pierce Arrow–3½–W–2	3	⅛	1⅛	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9	6	¼	2	18	4¾	⅛	4	133¼	38⅛
Pierce Arrow–5–R–10	3	⅛	1⅛	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9	6	¼	2	20⅞	4¾	⅛	4	139¼	38⅛
Pioneer 59AA–1	3	⅛	1¼	1½	V	13	2	12	2	35	1	F	14	1¾	¼	4	14	1¾	¼	4	102	30
Pittsburgher 2½	3	⅛	1¼	1¼	V	6	1½	12	1¼	37	1	F	52	2¼	¼	2	52	2¼	¼	2	136	33
Rainier R–8–2	3	⅛	1⅛	⅛	V	5	1½	13	1½	31½	1¼	F	44½	2	¼	1	44½	2	¼	1	.....	34
Rainier R6–1½	3	⅛	1⅛	⅛	V	9¾	1½	14¾	1½	41	1½	F	19	2	¼	2	19	2	¼	2	113	34
Rainier R–19–1	3	⅛	1⅛	⅛	V	8½	1½	14	1½	41	1½	F	19	2	¼	2	19	2	¼	2	100	34
Rainier R–11–¾	3	⅛	1⅛	⅛	V	9	1½	14½	1½	42	1½	F	11¼	3	¼	2	11¼	3	¼	2	90	34
Ranger TK–20–2	3	¼	1⅛	1½	H	11¾	1 ⅛	10	1¼	33¾	1	F	11½	3¼	M	2	11½	3¼	⅛	2	106½	33
Reliance 10A–1½	4	¼	1¼	⅜	V	10½	2	13½	1⅜	35	2	F	17	2	⅛	4	17	2	⅛	4	122	32
Reliance 20B–2½	4	¼	1¼	⅜	V	10½	2	13½	1⅜	35	2	F	17	2	⅛	4	17	2	⅛	4	127	32
Reo F—1500–2500 lbs	3	⅛	1	1	V	5½	1	5½	1	39 ⅛	⅞	F	43	2¼	⅛	1	39 ⅝	2	⅛	1	82	30
Republic 10-1-10E-1	3	⅛	1	....	V	12¼	2	6	2	40 ⅛	1¼	F	21¼	2½	⅛	4	19¾	2¼	⅛	4	.....	34
Republic 11X–1½	3	⅛	1	....	V	12¼	2	6	2	40 ⅛	1¼	F	25¼	2½	⅛	4	24¼	2¼	⅛	2	118	34
Republic 19–2½	3	⅛	1¼	....	V	8	1½	11¾	1¼	32 ⅛	1¼	F	25¼	2½	⅛	4	24¼	2¼	⅛	2	121	34
Republic 20–3½	3	⅛	1¼	....	V	7¼	1¾	5½	1¼	36¼	1½	F	55¾	3½	⅛	2	30 ⅛	4½	⅛	1	146	37
Republic Rapid Transit–¾	3	⅛	1	....	V	12	2¼	18½	2¼	31 ⅛	1	F	19	2	⅛	4	18	2	⅛	4	95	31
Rowe CW–1½	3	1¼	....	⅛	....	10½	1¾	10½	1½	32½	1⅛	F	19	2	⅛	8	19	2	⅛	8	113	33
Rowe CDW–2	3	1¼	....	⅛	....	10½	1¾	10½	1½	32½	1⅛	F	45	2	¼	4	45	2	¼	4	123	33
Rowe CDW–2½	3	1¼	....	⅛	V	20	1¾	15½	1½	32½	1⅛	F	51½	2½	¼	4	51½	2½	¼	4	123	33
Rowe GSW–3	3	1¼	....	⅛	....	20	1¾	15½	1½	36¼	2	F	51½	2½	¼	4	51½	2½	¼	4	140	33
Rowe HW–4	3	1¼	....	⅛	....	20	1¾	15½	1½	36½	2	F	56½	2½	¼	4	56½	2½	¼	4	146	36
Rowe FW–5	3	1¼	....	⅛	....	20	1¾	15½	1½	36¾	2	F	68	3	⅛	4	68	3	⅛	4	153	38½
Rowe GPW–3	3	⅛	1¼	⅛	....	10	1¼	6	1¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	152	33
Rumely A–1½	4	⅛	1⅛	1⅛	V	10½	1¾	10½	1¼	37	2	F	18	2	⅛	4	18	2	⅛	4	122	34
Samson 15–¾	3	⅛	1⅛	1⅜	V	6½	1¼	7¾	1¼	37 ⅜	⅜	V	37	2	⅛	1	35¾	1¾	⅛	1	108¼	39½
Samson 25–1¼	3	⅛	1⅛	1⅜	V	6½	1¼	7¾	1¼	37 ⅜	⅜	V	43⅜	2	⅛	1	37 ⅛	1¾	⅛	1	108¼	39½
Sanford W15–1	3	⅛	1	1	H	.....	.....	.....	.....	.....	.....	.....	22¼	2¼	¼	4	22¼	2¼	¼	4	.....	.....
Sanford 25–2½	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	22¼	2¼	¼	4	22¼	2¼	¼	4	.....	.....
Sanford 35–3½	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	55¾	2½	¼	2	55¾	2½	¼	2	.....	.....
Sanford 50–5	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	65	2	¼	2	65	2	¼	2	.....	.....
Schacht F–2	4	¼	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	35¾
Schacht F–3	4	¼	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	35¾
Schacht E–4	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3	¼	4	15	4	⅜	4	152	35¾
Schacht E–5	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3	¼	4	15	4	⅜	4	152	35¾
Schacht E–7	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3¼	¼	4	15	4	⅜	4	152	35¾
Schwartz A–1	3	⅛	1	⅛	V	9½	2¼	13	2¼	29½	⅞	F	15⅝	1¾	⅛	4	15⅝	1¾	⅛	4	.....	.....
Schwartz K–2	4	⅛	1	⅛	H	10	1¾	18	1¼	33½	2	F	20¼	2¼	¼	4	20¼	2¼	¼	4	120	34
Schwartz LS–L–LL–3	4	⅛	1½	⅛	H	10½	2	15	1¼	33½	2	F	51½	2¼	¼	2	51½	2¼	¼	2	.....	34
Schwartz MS–M–ML–5	4	⅛	1¾	⅛	H	12½	2	17	1¼	38⅜	2	F	69½	3	¼	2	69½	3	¼	2	.....	36
Selden Unit 30	3	⅛	1	1⅛	V	12	2	.....	.....	41	1¼	F	11 ⅛	3¼	¼	4	11 ⅛	3¼	¼	4	114	34
Selden Unit 50	3	⅛	1	1⅛	V	3¾	1¼	12	1¼	31	1½	F	13	3½	¼	4	13	3½	¼	4	134	34
Selden Unit 31	3	⅛	1	1⅛	V	3¾	1¼	12	1¼	31	1½	F	13	3½	¼	4	13	3½	¼	4	176	34
Selden Unit 70	3	⅛	1¼	1⅛	V	9	1¾	5½	1¾	34¼	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	153	37½
Selden Unit 51	3	⅛	1¼	1⅛	V	7½	1½	15½	1¼	31½	2	F	13	3½	¼	4	13	3½	¼	4	134	34
Selden Unit 90	3	¼	1½	1⅛	V	7	2	20½	2	40 ⅜	2	F	17 ⅛	4	¼	4	17 ⅛	4	¼	4	153	37½
Service 12–¾	3	⅛	1⅛	1⅛	V	13½	2½	14½	2½	35½	1¼	F	10 ⅛	2½	¼	4	10 ⅛	2½	¼	4	101½	37 ⅛
Service 15—1¼	3	⅛	1⅛	1⅛	V	10	1¾	2	1¼	35	2	F	19⅞	1¾	⅛	4	19⅞	1¾	⅛	4	101½	37 ⅛
Service 21–1½	3	⅛	1⅛	1⅛	H	10	2	6	1¾	37¾	1	F	12	3¼	¼	2	12	3¼	¼	2	109½	34
Service 32–2	4	¼	1⅛	1⅛	V	10	2	8	1¼	33	1¼	F	12	3¼	¼	2	12	3¼	¼	2	121 ⅛	34
Service 37–2	4	¼	1⅛	1⅛	V	10	2	8	1¼	33	1¼	F	12	3¼	¼	2	12	3¼	¼	2	121 ⅛	34
Service 52–3	4	¼	1⅛	1⅛	V	10	2	8	1¼	33	1¼	F	13½	3½	¼	2	13½	3½	¼	2	131⅛	34
Service 72–3½	4	¼	1⅛	1⅛	V	10	2	8	1¼	33	1¼	F	16	3¾	¼	2	16	3¾	¼	2	150¼	38
Service 77–4	4	¼	1⅛	1⅛	V	10	2	10	1¼	38¼	1½	F	16	3¾	¼	2	16	3¾	¼	2	145¾	38
Service 102–6	4	¼	1⅛	1⅛	V	10	2	10	1¼	38¼	1½	F	18½	4	¼	2	18½	4	¼	2	145¾	38
Signal NF–1	4	⅛	1⅛	1⅛	V	7¼	1½	12	1½	39¾	1¼	....	11	3	¼	4	11	3	¼	4	120	.....
Signal H 1½	3	⅛	1⅛	1⅛	V	8	1½	9	1¼	30½	1¼	....	12	3¼	¼	4	12	3¼	¼	4	120	34
Signal J–2½	3	⅛	1⅛	1⅛	V	10	1½	12	1¼	30½	1¼	....	13½	3½	¼	4	13½	3½	¼	4	126	34
Signal M 3½	3	⅛	1⅛	1⅛	V	5½	1½	12	1¼	34¼	1¼	....	16	3¾	¼	4	16	3¾	¼	4	168	38
Signal R–5	3	¼	1⅛	1⅛	V	8	2	16	2	41	2	....	18	4	¼	4	18	4	¼	4	172	38
Standard 75–¾–1	3	⅛	1	1⅛	H	10½	2 ⅛	14¾	1 ⅛	39¼	1¼	F	11¾	2½	¼	4	11¾	2½	¼	4	108	32
Standard I-K–1–1½	3	⅛	1	1⅛	V	10½	2 ⅛	14¾	1 ⅛	39¼	1¼	F	10 ⅛	3	¼	4	10 ⅞	3	¼	4	120	32
Standard 76–2½–3	3	⅛	1¼	1⅛	V	....	1⅞	12	1⅝	31¼	1¼	F	13 ⅛	3½	¼	4	13 ⅛	3½	¼	4	122	32
Standard 66–3½–4	3	⅛	1¼	1⅛	V	12	2⅛	18	1⅝	36½	1½	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	144	38
Standard 5K–5–7	3	¼	1½	1⅛	V	8	2 ⅛	3½	2⅜	42¼	2	F	17 ⅛	4	¼	4	17	4	¼	4	144	38
Sterling 1½	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	11¼	3¼	¼	8	11¾	3¼	¼	8	120	33½
Sterling 2	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	13⅜	3½	¼	8	13⅜	3½	¼	8	120	33½
Sterling 2½	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	13⅜	3½	¼	8	13⅜	3½	¼	8	138	34
Sterling 3½	3	¼	1½	¼	V	14⅝	1½	22	1½	40½	1½	F	15¾	3¾	¼	8	15¾	3¾	¼	8	144	38
Sterling 5-Worm	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	17 ⅛	4	¼	8	17 ⅛	4	¼	8	158	38
Sterling 5-Chain	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	56½	3½	¼	2	34 ⅛	4	¼	1	158	38
Sterling 7½	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	56½	3½	¼	2	34 ⅛	4	¼	1	158	38
Stewart M7–2	3	⅛	....	1 ⅛	....	.....	.....	.....	.....	.....	.....	.....	50⅝	2	⅛	2	8	5	⅛	2	132¾	32
Stewart M15–1	3	⅛	....	1	....	.....	.....	.....	.....	.....	.....	.....	41⅝	2	⅛	2	22¾	2	⅛	1	99½	32
Stewart M9–1½	3	⅛	....	1	....	.....	.....	.....	.....	.....	.....	.....	48½	2	⅛	2	8	5	⅛	2	119¼	32
Stewart M10–3½	3	⅛	....	1⅜	....	.....	.....	.....	.....	.....	.....	.....	60	3	⅛	2	8	5	⅛	2	139¾	32
Stewart M7X	3	¼	....	1 ⅛	....	.....	.....	.....	.....	.....	.....	.....	50⅝	2	⅛	2	8	5	⅛	2	132¾	32
Stewart M10X	3	¼	....	1⅜	....	.....	.....	.....	.....	.....	.....	.....	60	3	⅛	2	8	5	⅛	2	138	32
Stoughton C–¾	3	⅛	1	1⅜	V	14	2¼	14	2¼	33	1½	F	56½	2½	⅛	2	55	2¼	⅛	2	92½	34
Stoughton A–1	4	¼	1	1⅜	V	18	1¼	15	1¼	39¼	1½	F	16¾	1¾	⅛	4	16	1¾	⅛	4	88	34
Stoughton B–1½	4	¼	1	1⅜	V	18	1¼	15	1¼	39¼	1½	F	19	2	⅛	4	19	2	⅛	4	116	34
Stoughton D–2	4	⅛	1¼	1⅜	V	9	1½	15	1¼	40	2	F	23	2¼	¼	4	23	2¼	¼	4	116	34
Stoughton F–3	3	¼	1¼	1⅝	V	12	2	15	1¼	44	2	F	23	2¼	¼	4	23	2¼	¼	4	127	36
Super Truck 50	3	¼	1¼	1	V	19	1¾	19	1½	37½	1⅞	F	51½	2¼	¼	2	51½	2¼	¼	2	135	34
Super Truck 70	3	¼	1¼	1	V	19½	1¾	19	1½	37½	1⅞	F	55½	2½	¼	2	55½	2½	¼	2	144	34
Super Truck 100	3	¼	1½	1	V	6	1¾	19	1¾	42	1⅞	F	68	3	¼	2	51½	3	¼	2	144	34
Thomart Speed	3	⅛	1¼	1⅛	V	9	1¼	7¼	1¼	36½	2	F	19⅜	1¾	⅛	4	19⅞	1¾	⅛	4	102	34
Tiffin GW–1½	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	46	2	¼	1	46	2	¼	1	114	35
Tiffin MW–2½	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	52	2¼	¼	1	52	2¼	¼	1	138½	32¾
Tiffin F–35–3½	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	.....	58	2½	¼	1	58	2½	¼	1	151	35½
Tiffin TW–5	4	¼	1½	1½	V	.....	.....	.....	.....	.....	.....	.....	68	3	¼	1	68	3	¼	1	156	38½
Tiffin UW–6	4	¼	1½	1½	V	.....	.....	.....	.....	.....	.....	.....	68	3	¼	1	68	3	¼	1	156	38½
Titan 3½	4	¼	1½	1¾	....	.....	.....	.....	.....	.....	.....	.....	60	2¼	⅛	2	14	4½	⅛	2	144	34

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Titan 5–6	4	1¼	1½	1¾									90	2¼	⅛	2	14	4½	⅛	2	144	34
Titan 2½	4	¼	1¼	1¼									54	2½	⅛	2	26	4	⅛	1	144	32
Tower J–1½	3	⅛	1¼	1¼									11¾	3¼	¼	4	11¾	3¼	¼	4	135¼	32½
Tower H–2½	3	⅛	1¼	1¼									13 ⅛	3½	¼	4	13 ⅛	3½	¼	4	138¾	32½
Tower G–3½	3	⅛	1½	1½									15 5/16	3⅝	¼	4	15 5/16	3⅝	¾	4	152 11/16	37
Traffic C–4000	3	⅛	1	⅛	H	10½	2	10	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	120¾	42
Traffic 6000	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	52	3	⅛	2	47	2	⅛	2	120¾	34
Traffic Speedboy	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	86	34
Transport 15–1	3	⅛	1	1	H	10¾	2	13	2	40 3/8	1¼	F	48	2½	⅛	2	46 5/8	2	⅛	2	98 1/16	34
Transport 25–1½	3	⅛	1	1	V	12	2	12	2	36½	1¼	F	48½	2	⅛	2	46½	1½	⅛	2	100 7/16	34
Transport 35–2	3	⅛	1	1	V	10¾	2	13	2	40 3/8	1¼	F	11	3	⅛	2	46½	2½	⅛	2	116 7/8	34
Transport 60–3½	4	¼	1¼	1¼	V	9¾	2	10	1¼	32¾	2	F	10¼	3½	⅛	2	48½	2½	⅛	2	150	34
Transport 75–5	4	¼	1¾	1¾	V	12	2	16	1¼	35 7/8	2	F	11 7/8	3	⅛	4	58	2½	⅛	2	170	36½
Transport 55–3	4	⅛	1¼	1¼	V	9	1½	16	1¼	31¼	1¼	F	10¼	3½	⅛	2	48½	2½	⅛	2	150	34
Traylor B–1½	4	¼	1		V					38	1	F	50	2	¼	2	50	2	¼	2	117	34
Traylor C–2–2½	4	¼	1¼		V					36	2	F	50	2	¼	2	50	2	¼	2	122	34
Traylor D–3–3½	4	¼	1¼		V					36	2	F	56½	2¼	¼	2	56½	2¼	¼	2	142	34
Traylor F–5–6	4	¼	1¾		V					37	2	F	59	2½		2	59	2½		2	165	35
Triangle AA–1	3	⅛	1	1	H	17	2	17	2	34	1	F	22	2½	⅛	1	41	2	⅛	2	94	35
Triangle A–1½	3	¼	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7	4	⅛	2	49	2	⅛	2	126	34
Triangle B–2½	3	¼	1¼	1¼	V	9	1½	18	1¼	39¼	1½	F	7	4	⅛	2	52	3	⅛	2	132	34
Triangle C–2	3	¼	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7	4	⅛	2	52	3	⅛	2	129	34
Triumph HB–2½	4	¼			V	9	1¾	17	1¼	32½	2	F	46	2½	⅛	2	32	2½	⅛	2	120	34½
Triumph HC–2	4	¼			V	9	1¾	17	1¼	32½	2	F	46	2½	⅛	2	32	2½	⅛	2	120	34½
Ultimate A–2	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	126	32¾
Ultimate AJ2	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	126	32¾
Ultimate AJL–2	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	150	32¾
Ultimate B–3	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	144	32¾
Ultimate BL3	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	192	32¾
Ultimate D–5	4	¼	1¼	1 5/8	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	180	37½
Union F–2½	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	55	3	⅛	1	50	2	⅛	1	133½	32
Union FW–2½	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4½	⅛	1	52	3	⅛	1	133½	32
Union H–4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	56¾	3½	⅛	1	32	4½	⅛	1	157½	34
Union HW–4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4½	⅛	1	24	4	⅛	2	157½	34
Union JW–6	3	¼	1½	2	V	20	1¾	19½	1½	41½	2	F	34	4	¼	1	28	5	¼	2	190	36
United 1½	4	¼	1	1 ⅛	H	15	2½	16	1½	37½	2	F	48	2	⅛	1	48	1½	⅛	1	120	33
United 2½	4	¼	1¼	1 ⅛	H	7	2½	12	1½	37½	2	F	49	3	⅛	1	49	2½	⅛	1	Opt	33
United 3½	4	¼	1¼	1 ⅛	H	7	2½	7	1½	37½	2	F	62	3	⅛	1	58	2½	⅛	1	Opt	34
United 5	4	¼	1½	1 ⅛	H	14½	2½	12	1½	37½	2	F	82½	2¼	⅛	1	88½	2½	⅛	1	Opt	38
U.S.N.–1½	3	M	1	⅛	H	11½	2	9	1¼	37	1¼	F	50½	2½	⅛	2	46½	1½	⅛	2	120	34
U.S.N.W.–1½	3	⅛	1	⅛	H	11½	2	9	1¼	37	1¼	F	19½	2	⅛	4	19½	2	⅛	4	120	34
U.S.R.–2½–3	3	⅛	1¼	⅛	V	10	1¼	10	1¼	35	1¼	F	21	2¼	¼	4	21	2¼	¼	4	144	34
U.S.S.–3½–4	3	⅛	1¼	¼	V	9	1½	8	1½	37	1¼	F	50	2½	¼	4	50	2½	¼	2	156	36
U.S.T.–5–6	4	⅛	1½	¼	V	15	2	13	1½	38¾	2	F	62	3	¼	4	33	4	¼	1	168	36
U.S.U.–1¼	4	⅛	1	⅛	V	11½	1¾	11½	1¼	33	1¼	F	50½	2½	⅛	2	46½	1½	⅛	2	108	32
Velie 46–1½	3	M	1	⅛	V	9	2	12	1¼	41 3/8	¾	V	54 ⅛	2½	⅛	2	52 1/8	2¼	⅛	2	120	31
Vim 29½	3	⅛	⅞							30¾	1	F	14 1/8	1½	⅛	4	14 7/8	1½	⅛	4	64	30
Vim 30½	3	⅛	⅞							30¾	1	F	14 7/8	1½	⅛	4	14 7/8	1½	⅛	4	83½	30
Vim 31–1	4	⅛	1							40	1	F	18	2	¼	4	18	2	¼	4	92	32
Vim 22–2	4	⅛	1							40	1	F	42 5/8	2	¼	2	42 5/8	2	¼	2	120 5/8	34
Vim 23–3	5	⅛	1¼							40	1	F	48 1/8	2¼	¼	2	48 1/8	2¼	¼	2	160 ⅛	34
Walker M1½													43	2¼	⅛	2	14	1¾	⅛	4	90	32
Walker P3½													53¼	3	⅛	2	19¼	2½	⅛	4	140	35
Walker N5													53¼	3	⅛	2	19¼	2½	⅛	4	162	35
Walker Model 22													45½	2½	⅛	2	16	2	⅛	4	99	32
Walker Model 42													53¼	3	⅛	2	19¼	2½	¼	4	120	32
Walker Johnson A–2	3	⅛	1	1	V	11½	2	7½	1¾	37	1	F	12	3¼	¼	4	12	3¼	¼	4	117	32
Walker Johnson B3	4	¼	1¼	1¼	V	10	2	8	1¼	33½	1¼	F	13	3½	¼	4	13	3½	¼	4	133	32 ⅛
Walter S–5	3	¼	1½	2	V	10	1½	18	1½	39	1½	F	15	5	¼	4	57	2½	¼	2	150	36
Ward LaFrance 2B–2½–3½	3	¼	1¼	1½	V	7	1½	16	1½	41½	1½	F	13	3½	¼	4	13	3½	¼	4	137½	33
Ward LaFrance 4A–3½–5	3	¼	1¾	1¾	V	8½	1½	18	1½	41½	1½	F	15½	3¾	¼	4	15½	3¾	¼	4	170 ⅛	37
Ward LaFrance 5A–5–7	3	¼	1½	1¾	V	9¼	1½	18	1½	41½	1½	F	18	4	¼	4	18	4	¼	4	170 ⅛	37
Watson Bl	3	¼	1	1⅜	V	16½	1¼	4	1¼	40	1½	F	42	1¾	¼	2	41	1¾	¼	2	90 ⅛	30
Watson N–3½	3	⅛	1¼	1½	V	16½	1¼	3	1¼	34	1¼	F	62	2½	¼	2	47	2½	¼	2	147	37
Watson U–5	3	⅛	1½	1½	V	16½	1¼	3	1¼	38½	1¼	F	15½	3¼	¼	4	15½	3¾	¼	4	.....	36
Wichita K–1	3	¼	1⅛	1⅛	V	18½	1¼	12	1¼	52¾	1½	F	19½	2	⅛	4	19½	2	⅛	4	127½	30
Wichita M–2	3	¼	1⅛	1⅛	V	18½	1¼	12	1¼	52¾	1½	F	49	2	⅛	4	49	2	⅛	2	126½	30
Wichita RX–3	3	¼	1¼	1¼	V	11	1½	11	1½	40	1½	F	54	2¼	⅛	2	54	2¼	⅛	2	130	30
Wichita O–4	3	¼	1½	1¾	V	11	1½	11	1½	40	1½	F	56½	2½	⅛	2	56½	2½	¼	2	152½	36
Wichita S–5	3	¼	1½	1¾	V	11	1½	11	1½	40	1½	F	66	3	¼	2	66	3	¼	2	163½	36
Wilcox AA–1	3	¼	1										47 ⅛	2½	⅛	2	33¼	2½	⅛	2	96	34
Wilcox B–1½	3	¼	1¼										47 ⅛	2½	⅛	2	33¼	2½	⅛	2	132	33
Wilcox C–2½	3	¼	1¼										57½	2½	⅛	2	42½	2½	⅛	2	141	33
Wilcox E–3½	3	¼	1¼										57½	2½	¼	2	42½	2½	¼	2	156	33
Wilcox F–5	3	¼	1½										69 3/8	3½	¼	2	52	3½	¼	2	148½	36
Wilson 1½	4	⅛		1									39½	1¾	⅛	2	39½	1¾	⅛	2	120	33
Wilson 2½	4	⅛		1¼									13¼	3½	⅛	4	13¼	3½	⅛	4	126	33
Wilson 3½	4	⅛		1½									16	3¾	⅛	4	16	3¾	⅛	4	147	38
Wilson 5	4	⅛		1½									18	4	⅛	4	18	4	⅛	4	147	38¼
Winther 751–1	3	¼	1		H	15¾	2	17	2	36 ⅛	1	F	42	2	⅛	2	24	2	⅛	1	102	30
Winther 39–1½	3	¼	1¼		V	10	1¾	4 1/16	1½	33¼	1¼	F	50	2¼	¼	2	22½	2¼	¼	1	120	30
Winther 430–1½	3	¼	1¼		V	11¼	1½	11½	1½	30 5/8	1½	F	50	2¼	¼	2	22½	2¼	¼	1	120	30
Winther 450 2½	3	¼	1¼		V	11½	1½	6½	1½	37½	1¼	F	52	3	¼	2	22½	2¼	¼	2	120	30
Winther 50–2½	3	¼	1¼		V	17 ⅛	1¾	8	1½	42½	2	F	52	3	¼	2	50	2¼	¼	2	58	33
Winther 51–2½	3	¼	1¼		V	17 ⅛	1¾	8	1½	42½	2	F	52	3	¼	2	50	2¼	¼	2	144	33
Winther 70–3½	3	¼	1¼		V	17 ⅛	1¾	8	1½	42½	2	F	62	8	¼	2	60	2½	¼	2	156	33
Winther 109–5	3	¼	1½		V	21½	1¾	8	1½	42½	2	F	93	2¼	¼	2	93	2¼	¼	2	156	33
Winther 140–7	3	¼	1½		V	12	1¾	6	1¾	42¾	2	F	93	2¼	¼	2	93	2¼	¼	2	156	33
Wisconsin 2 (Loganville)	3	¼	1¼	1¼	H	17	2	17	2	34	¼	V	58	2½	⅛	2	56½	2¼	⅛	2	114	34
Wisconsin 2½ (Loganville)	3	⅛	1¼	1¼	V	12	1½	10	1¼	40	¾	V	58	2½	⅛	2	56½	2¼	⅛	2	120	34
Witt Will N–1½	3	⅛	1¼	1¼	V	8	1½	12	1¼	31	1¼	F	48	3¼	¼	4	48	3¼	¼	4	Opt	32
Witt Will P–2	3	⅛	1¼	1¼	V	8	1½	12	1¼	31	1¼	F	52	3½	¼	4	52	3½	¼	4	Opt	32
Wolverine J–1	4	⅛	1	1¼	V	9½	1½	11½	1½	42	1¼	F	42½	2½	⅛	2	38	1¾	⅛	2	110	34½
Wolverine J–1½	4	⅛	1	1¼	V	9½	1½	11½	1½	42	1¼	F	51	3	⅛	2	42	2	⅛	2	120	34½
Wolverine J–2	4	⅛	1	1¼	V	9½	1½	11½	1½	42	1¼	F	51	3	⅛	2	42	3	⅛	2	132	34½
Wolverine K–3	4	⅛	1	1¼	V	9½	1½	11½	1½	42	1½	F	55	3	⅛	2	47½	2	⅛	2	153	34
Wolverine L 5	4	⅛	1¼	1¼	V	9½	1½	11½	1½	44	1½	F	61½	3	⅛	2	58	2½	⅛	2	174	35 ⅛
Yellow Cab M22—¾	3	⅛	1	⅛	V	7½	2	9 ⅛	2	38½	⅝	V	49	2½	¼	2	45	2½	¼	2	60	43
Yellow Cab M42–1¼	3	⅛	1	⅛	V	7½	2	9 ⅛	2	38½	⅝	V	11	3	¼	4	11	3	¼	4	92	32

KEY OF ABBREVIATIONS

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Page Following. In All Specifications—O, Own; Op or Opt, Optional

Engine:
Beav—Beaver
Bud—Buda
Cont—Continental
Dodge—Dodge Bros.
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal
Her—Hercules
Hig—Highway
Hin—Hinkley
HSp—Herschell-Spillman
1 LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Ster—Sterling
Sup—Supreme
TC—Twin City
Vict—Victory
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin

Valve Arrangement:
H—Overhead
2 L—ELL-Head
S—Sleeve
T—TEE-Head

How Cooled:
A—Air
B—Pump & Thermo
3 C—Centrifugal
G—Gear Pump
T—Thermo-Syphon

Radiator (Make):
BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
4 Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Prefex
R-T—Rome-Turney
S-W—Sparks-Withington
Spar-Spartan
Spec—Special
Spli—Splitex
Stan—Standard

Radiator (Type):
C—Cellular
Fin—Fin Tube
5 H—Honeycomb
PT—Plain Tube
Whee—Wheeler
ZZT—Zig Zag Tube

Lubrication:
6 FS—Force and Splash
F—Force Feed
S—Splash

Carburetor:
B&B—Ball & Ball
Bent—Bennett
Cart—Carter
Eag—Eagle
7 Ens—Ensign
Flch—Fletcher
Holl—Holley
John—Johnson
King—Kingston
Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Shk—Shakespeare
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

Fuel Feed:
G—Gravity
8 P—Pressure
V—Vacuum

Governor:
Con—Continental
Del—Delaney
Dup—Duplex
Hin—Hinkley
McC—McCanna
Mer—Merrill
9 Mon—Monarch
Mue—Mueller
Phar—Pharo
Pier—Pierce
Rug—Ruggles
Sim—Simplex
Wau—Waukesha

Clutch (Make):
B B—Borg & Beck
B-Li—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
Dod—Dodge Bros.
Full—Fuller
GB&S—Golden, Belknap & Swartz
10
Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Munc—Muncie
M-P—Muncie Products
T-D—Twin Disc
W-C—Warner Corporation
W-Gr—Warner Gear

Clutch (Type):
C—Cone
D—Disc
DP—Dry Plate
11 DD—Dry Disc
Fr—Friction
WP—Wet Plate
WD—Wet Disc

Ignition System:
Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Bos—Bosch
Ber—Berling
Con—Connecticut
Del—Delco
Eis—Eisemann
12 Kin—Kingston
KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

Engine Starter:
AC—Allis-Chalmers
AK—Atwater Kent
AL—Auto-Lite
Bj—Bijur
Bos—Bosch
13 DL—Delco
Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
RE—Remy
USL—U. S. L.
W—Westinghouse
Wg—Wagner

Gearset:
B-Li—Brown-Lipe
Cott—Cotta
Covt—Covert
D-Sea—Driggs-Seabury
Det—Detroit
Dod—Dodge Bros.
Dun—Dundore
14 Durst—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Munc—Muncie
M-P—Muncie Products
Rock—Rockford
W-C—Warner Corporation
W-Gr—Warner Gear

Location of Gearset:
A—Amidships
15 J—Unit with jackshaft
R—Rear
U—Unit with engine

Universal:
A-B—Easton Mch. Co.
Acm—Acme
Arv—Arvac
Bear—Bearings Co.
Bld—Blood-Brothers
Cli—Climax
Det—Detroit
Dit—Ditwiler
Flex—Flexite
Hart—Hartford
16 KB—Kinsler-Bennett
Mech—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Peters
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

Springs:
All—Alloy Steel
Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
Cham—Champion
Coop—Cooper
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
Hig—Higgins
IC—Iron City
Jax—Jaxon
Kal—Kalamazoo
17 Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
Ster—Sterling
Tem—Temme
Tut—Tuthill
US—United States
Wis—Wisconsin

Final Drive:
B—Bevel Gear
C—Chain
18 I—Internal Gear
N—Concentric Spur
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

Rear Axle (Make):
Amr—American
Badg—Badger
Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Fli—Flint
Hind—Hindley
IrM—Iron Mt.
Keno—Kenosha
LM—L M Axle
19 Rock—Rockford
Russ—Russel
Sals—Salisbury
Sav—Savage
Shel—Sheldon
Stn—Stanweld
StP—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
W-M—Weston-Mott
US—United States
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

Rear Axle (Type):
Flot—Floating
20 D—Dead
½-Fl—Semi-Floating
¾-Fl—¾-Floating

Steering Gear:
CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod—Dodge Bros.
Gem—Gemmer
Jac—Jacox
21 KH—Keystone Hendley
Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
W-C—Warner Corporation
Woh—Wohlrab

Wheels:
Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
E&O—Eberly & Oris
Hay—Haynes
Hoo—Hoopes Brothers
Jon—Jones
Kel—Kelsey
MM—Michigan Malleable Iron Co.
22 Mot—Motor Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Rus—Russell
Sal—Salisbury
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Wan—Wayne
W-L—Waterhouse & Lester
Wes—Western Wheel Co.

Rim Equipment:
Bak—Baker
Det—Detroit
Fir—Firestone
23 Gdy—Goodyear
Hay—Hayes
Jax—Jaxon
Kel—Kelsey
Ken—Kennedy

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Also Replacement Table in "Service and Repair Departments." Truck Frame Dimensions Are Included in Replacement Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

* An asterisk in front of the model name indicates that corrections have been made somewhere in the specifications since the previous month

Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
1000 Pounds		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23		
Dort	685	Lyc K	3½x5	19.6	L	T	Fed	C	S	Cart	V	.....	Own	C	Con	Bos	Own	U	3	MM	Lig	S	Fli	¾ Fl	4.45	15.13	Sag	31x4*	31x4*	Imp	Cle	2015	105
Vim 29	1050	Own	3½x4½	15.6	L	T	McC	Fin	FS	Zen	G	.....	B.B	DD	Wes	W	Own	U	3	Spic	Shel	W	Own	.....	5.5	.....	CAS	31x4*	31x4*	Hoo	Fir	2175	108
Vim 30	1175	Own	3½x4½	15.6	L	T	McC	Fin	FS	Zen	G	.....	B.B.	DD	Wes	W	Own	U	3	Spic	Shel	W	Own	.....	5.5	.....	CAS	32x4½*	32x4½*	Hoo	Fir	2290	127
1500 Pounds																																	
Acason Fast	.....	Own	3¾x5	22.5	L	C	.....	C	F	Sheb	V	.....	Full	D	Eis	W	Full	U	3	Bld	Det	W	Timk	½ Fl	6.25	25	Ros	34x5*	34x5*	Bim	.....	3080	142
*Brockway E2	.....	Wis SU	4 x5	25 6	H	C	GO	C	FS	Strm	V	.....	B-Li	DD	Rm	LN	B-Li	U	3	M-E	Row	S	Col	Flot	5 13	20.5	Gem	33x5*	33x5*	....	Fir	3450	135
*Chevrolet G	650	Own	3 11x4	21.7	H	B	Har	H	FS	Zen	G	.....	Own	C	Rm	AL	Own	...	3	Own	Arm	S	Own	½ Fl	5.42	18.9	M-P	31x4*	34x4½*	Hay	Jax	2167	120
Clydesdale 10	1485	Cont N	3¾x5	22.5	L	T	.....	PT	FS	Zen	V	.....	B.B.	DP	Bos	Bos	B-Li	U	3	Spic	Stan	B	Timk	½ Fl	5	16.4	Jac	34x5	34x5	.....	Fir	3100	138
Commerce 9	1150	Cont N	3¾x5	22.5	L	I	Lng	Fin	S	Zen	V	.....	.....	DG	Eis	Bj	Det	U	3	Spic	Am	B	Sals	¾ Fl	5.73	18.33	Jac	32x4½	32x4½	.....	.....	.....	127
Dodge Brothers	730	Own	3⅞x4½	24	L	C	McC	PT	FS	Stew	V	.....	Own	DD	NE	NE	Own	U	3	Own	Own	S	Own	½ Fl	4.16	19.4	Own	32x4*	32x4*	Kel	Kel	1992	114
Federal R–2	1375	Cont J–4	3¾x5	22.5	L	C	Own	Fin	F	Zen	V	.....	B.B.	DP	Eis	RE	Det	U	3	Pet	Det	W	Timk	½ Fl	5.6	17.4	Gem	33x5	33x5	Det	Det	2950	132
H. R. L.-L	2200	H-Sp 7000	3½x5	19.6	L	T	Fed	Fin	F	Zen	V	.....	Own	DP	Bos	GD	Covt	U	3	Spic	Shel	W	Wis	½ Fl	6.2	22.	Ross	34x4½*	35x5*	Sch	Gdy	3300	134
Internat'l Speed Truck S	1250	Lyco-Int'l	3½x5	19.6	L	C	Lng	Fin	FS	Ens	G	..	Mun	DP	Con	AL	Mun	U	3	Sned	Stan	I	Torb	D	6.3	.....	CAS	.....	.....	Opt	.....	2600	124
Moreland R–R	1595	Her O	4 x5	25.6	L	C	Own	C	F	Zen	G	.....	B-Li	DD	AuL	AuL	B-Li	U	3	Ther	US	B	Timk	½ Fl	5.5	28	Ros	34x5	34x5	.....	.....	3350	132
Ogden A2	.....	Cont N	3½x5	19.6	L	T	Chic	Fin	FS	Strm	V	.....	B-Li	DD	Spl	.....	B-Li	U	3	M-E	Tut	W	Timk	½ Fl	6.2	.....	Ros	34x5	34x5	Stn	.....	3100	125
Rainier R2I	1970	Cont-N	3½x5	19.6	L	T	Har	H	FS	Zen	V	Mon	B-Li	DP	Eis	.....	B-Li	U	3	Hart	Per	W	Timk	½ Fl	7.2	23.9	Lav	35x5*	35x5*	.....	Fir	2350	125
Republic Rapid Transit	1250	Lyco KB	3½x5	19.6	L	T	Own	C	FS	Strm	V	.....	Full	DD	AuL	AL	Full	U	3	Spic	Math	I	Torb	D	5.38	15.06	Jac	32x4½*	32x4½*	Mot	Fir	2650	124
Samson 15	595	Own	3 11x4	21.8	H	C	Own	PT	FS	Zen	G	Mon	Own	D	Rm	AL	Own	A	3	Own	Own	S	Own	½ Fl	6.33	21.02	Own	32x4*	32x4*	Own	Hay	2366	118
Service 12	.....	Mid 409	3¼x4½	16.9	H	I	Lng	Fin	F	Strm	G	.....	Hoos	DP	Rm	Rm	Det	U	3	M-E	Shel	B	Timk	½ Fl	6 88	22.1	Ros	32x4½*	32x4½*	Bim	Fir	2720	128
Standard 75	1330	Cont N	3¾x5	22.5	L	C	Lng	Fir	F	Strm	V	.....	B-Li	DD	Eis	.....	B-Li	U	3	Spi	Per	W	Tim	½ Fl	5.6	24.3	Ros	33x5*	33x5*	Dis	Fir	.....	.....
Stewart Utility Wagon	1245	Buda	3⅝x5¼	21	L	C	Bus	PT	F	Zen	G	.....	.....	DP	Rm	.....	Own	U	3	Spic	Det	I	Clark	D	5.5	16.99	Ros	34x4½*	34x4½	Way	Fir	3150	128
Stoughton C	1240	Mid 410	3⅜x4½	18.2	H	.....	.....	Fin	F	Zen	V	.....	Det	DD	Rm	RE	Own	U	3	Ther	Own	B	Col	Flot	5.87	23.5	Lav	34x4½	34x4½	Roy	Gdy	2480	131
*Watson B	1650	Buda MU	3⅝x5⅛	21	L	T	GO	C	FS	Zen	G	Wau	B-Li	DP	Sim	D	B-Li	U	3	M-E	Shel	W	Emp	½ Fl	6.2	20.7	Lav	35x5	35x5	Hoo	Fir	2900	128
White 15	2400	Own	3¾x5½	22.5	L	P	C	C	FS	Own	G	.....	Own	D	....	.....	Own	A	4	Own	.....	B	Own	½ Fl	.....	.....	Own	34x5*	34x5*	.....	Fir	3200	133
Yellow Cab M-22–¾	1590	Cont V-4	3¾x5	22.5	L	T	Lng	Fin	FS	Zen	G	.....	B-Li	DD	Bos	.....	B-Li	U	3	Spic	Mati	B	Timk	.....	4.9	16.31	Gem	33x4½*	33x4½*	Stn	Fir	2400	117
1 Ton																																	
Acason R	.....	Wau B.U.X.	3¾x5½	22.5	L	P	Can	C	S	Sheb	V	Wau	Full	.....	Eis	.....	Full	U	4	Bld	Det	W	Timk	½ Fl	7.20	34.5	Ros	36x3½	36x5	Bim	Opt	3650	142
Acme 20	.....	Cont N	3¾x5	22.5	L	T	GO	C	FS	Rayf	V	Dup	B.B.	DP	Eis	GD	Cott	U	3	Bld	Det	W	Timk	½ Fl	6.2	24.8	Ros	35x5*	35x5*	Bim	.....	3050	129
Apex GW	1750	Buda MU	3⅝x5½	21	L	T	GO	C	S	Strm	V	.....	Full	D	AuL	AL	Eull	U	3	Bld	Det	W	Timk	.....	6.25	.....	Lav	35x5*	35x5*	Roy	Fir	2650	130
Atlas 22	1495	Buda WU	3¾x5⅛	22.5	L	C	Own	H	F	Zen	G	.....	Opt	DD	AtK	Bj	Own	U	3	Ster	.....	W	Own	½ Fl	.....	14.46	.....	34x4½	34x4½	Sch	Fir	2850	130
Avery	.....	Own 6	3 x4	21 6	L	C	Own	C	S	Strm	V	Own	Own	DP	KW	W	Own	U	3	Pet	Math	I	Torb	D	8	26.66	Ros	34x5*	34x5*	StM	Gdy	2800	129
Bell M	1495	Buda	3⅝x5⅛	21	L	C	Chic	PT	F	Zen	V	.....	B.B.	DP	Eis	.....	Mun	U	3	Ther	Det	W	Timk	.....	7.2	.....	Dit	35x5	35x5	Bim	Fir	2500	126
Belmont B	1525	Buda MU	3⅝x5⅛	21	L	C	R-T	Fin	S	Zen	G	.....	GB&S	.....	Con	Dy	.....	U	3	Ster	Math	B	Fli	¾ Fl	5.2	15.75	Lav	31x4	31x4	E-O	.....	2000	113
Bessemer G	.....	Cont N	3½x5	19.6	L	T	Std	C	FS	Strm	G	.....	Full	DD	Bos	Bj	Full	U	3	Arv	Per	I	Torb	D	.....	.....	Ros	35x5	35x5	Sch	Fir	3000	124
Bethehem GN	1195	Own	3½x5	19.6	L	T	GO	H	F	Zen	G	.....	.....	DD	Bos	GD	Det	U	3	Spic	Math	B	StP	½ Fl	6.	18.8	Ros	35x5	35x5	.....	Fir	2800	125
Birch I	1285	Vict	3½x5	19.6	I	T	Chic	PT	FS	Strm	G	.....	Full	DD	Con	.....	Full	U	3	UM	.....	I	Clark	D	.....	.....	Lav	32x3½*	32x4*	.....	.....	3200	132
Casco Model A	1785	Buda MU	3⅝x5⅛	21 2	L	C	GO	C	F	Zen	V	.....	Full	DD	Bos	Bos	Full	U	3	Spi	Stan	S	Col	½ Fl	5.85	23.46	Woh	34x5	34x5	Arc	Fir	3100	130
*Chevrolet T	1095	Own	3 11x5¼	21.7	H	C	Har	H	FS	Zen	G	Mon	Own	C	Rm	AL	Own	...	3	Arv	Arm	W	Own	½ Fl	7	24.67	M-P	33x4*	35x5*	Hay	Jax	2840	125
Clydesdale 10A	1585	Cont N	3¾x5	22.5	L	T	.....	PT	FS	Zen	V	.....	B.B.	DP	Bos	Bos	B-Li	U	3	Spic	Stan	W	Timk	½ Fl	6.75	22	Jac	34x5	34x5	.....	Fir	3100	138
Collier 18	.....	Cont N	3½x5	19.6	T	P	Lng	PT	S	Zen	V	Mon	Full	DP	Eis	.....	Full	U	3	UP	Math	W	Timk	½ Fl	7.75	31	Ros	34x4	34x5	Bim	Fir	3210	140
Corbitt E–22	1480	Cont N¾	3¾x5	22.5	L	T	McC	Fin	FS	Strm	V	.....	B-Li	DD	Eis	.....	B-Li	U	3	Hart	Shel	W	Shel	½ Fl	6	20	Ros	34x3½	34x4	Bim	Fir	3730	130
Day Elder A8	1600	Cont N	3¾x5	22.5	L	T	Bus	Fin	FS	Zen	G	.....	Covt	DD	Eis	.....	Covt	U	3	Hart	IC	W	Shel	½ Fl	6	21.96	Gem	35x5*	35x5*	Jon	Fir	3000	128
*Dearborn E (Speed)	1600	Buda MU	3⅝x5½	21	L	C	Chic	PT	F	Strm	V	.....	Full	DP	Con	Bos	Full	U	3	Hart	.....	W	Wis	½ Fl	6.2	18.6	Ros	35x5*	35x5*	.....	Fir	3280	132
*Defiance G	1695	Hig	3¾x5	22.5	L	P	Per	C	FS	Strm	V	.....	B.B.	DP	Eis	AL	G-Le	U	3	Arv	Det	B	Eat	.....	6.14	.....	Own	35x5*	35x5*	StM	Fir	2700	128
Denby 31	1485	Cont	3½x5	19.6	L	T	Lng	PT	FS	Strm	G	.....	Full	DD	Eis	RE	Full	U	3	UP	Det	B	Col	½ Fl	5.85	23.46	Ros	35x5*	35x5*	Mot	Fir	2840	130
Diehl A	.....	Cont N	3½x5	19.6	L	T	.....	H	FS	Zen	G	.....	B.B.	.....	Sim	...	Durs	...	3	KB	Mar	I	Torb	D	5.3	.....	Ros	34x4½*	35x5*	Sch	Fir	2400	115
Eugol	1795	Buda MU	3⅝x5½	21	L	C	Chic	PT	F	Strm	V	.....	UC	DD	Wes	W	UC	U	3	Pet	Math	W	Timk	½ Fl	6.25	30.3	Ros	34x5*	34x5*	Bim	Fir	3500	135
Federal 8D	1800	Cont J-4	3¾x5	22.5	L	C	Own	Fin	F	Zen	V	Phar	B.B.	DP	Eis	.....	Det	A	3	Spic	Math	W	Timk	½ Fl	7.2	20.65	Gem	35x5*	36x6*	Det	Det	3600	132
Ford T	285	Own	3¾x4	22.5	L	C	Own	Fin	S	.....	G	.....	.....	.....	Own	.....	Own	U	2	Own	Own	W	Own	½ Fl	Opt	19.9	Own	30x3½*	32x4½	.....	.....	1430	124
Forschler A	.....	Cont N	3½x5	19.6	L	C	EM	...	FS	Zen	V	Dup	Full	...	Bos	Op	Full	...	3	Hart	Own	W	Shel	.....	.....	.....	Ros	34x3	34x4	.....	.....	3450	120
Fulton A	1495	H-Sp-7000	3½x5	19.6	L	T	Liv	H	FS	Cart	G	.....	DP	B.B.	Ber	W	Durs	U	3	Spic	Row	B	Col	.....	6.8	.....	Lav	35x5	35x5	Hoo	Fir	2800	130
Garford 15	1590	Buda MU	3⅝x5½	21	L	C	Lng	PT	F	Strm	G	.....	.....	DD	AtK	AK	Own	U	3	Spic	Per	W	Timk	½ Fl	6.25	.....	Gem	34x5*	34x5	.....	.....	3500	132
Gary F	1675	Buda WU	3¾x5	22.5	L	T	Chic	Fin	S	Mas	G	Pier	Full	DD	Eis	.....	Full	U	3	Hart	Tut	W	Timk	½ Fl	.....	.....	Ros	36x3½	36x5	Pru	.....	3200	130
G. M.C. K-16	1295	Own	3½x5½	19.6	L	T	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Ow	Own	U	3	UM	Det	B	Own	¾ Fl	6	21.9	Own	34x6*	34x6*	Kel	.....	3300	132
*Graham Brothers	1245	Dodge	3⅞x4½	24	L	C	McC	PT	FS	Stew	V	.....	Dod	DD	NE	NE	Dod	U	3	Var	Det	S	Own	½ Fl	6.28	29.29	Dod	32x4½*	34x5*	.....	Fir	2515	140
Gramm–Pioneer 10 Speed T	1365	Lyco	3½x5	19.6	L	C	Own	Fin	S	Strm	G	.....	B.B.	DP	Con	AL	.....	U	3	Own	Per	B	Sals	¾ Fl	5.75	21	Ros	33x5*	33x5*	.....	Fir	2370	129
Highway Special	.....	.....	3½x5	19.6	L	I	Own	C	F	Zen	.....	.....	Full	DD	Bos	.....	Lav	...	...	...	...	...	Col	½ Fl	5.8	19.9	Lav	32x4½	32x4½	.....	.....	2700	128
Higrade A18	2100	Cont N	3½x5	19.6	L	T	Per	PT	FS	Zen	V	Dup	Full	DD	Stm	AL	Full	U	3	Bld	Per	W	Shel	.....	7.7	32.75	Lav	35x5	35x5	Det	Fir	2700	115

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
1½ Ton—Con'd		1			2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			21			22	23		
Diamond T–Farm Spec.	2525	Hin	3¾x5½	22.5	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	.....	Covt	U	3	Spic	Math	W	Own	½Fl	8.2	29.9	Gem	36x3½	36x5	.....	.....	5100	144
Diehl B	.....	H-Sp 7000	3½x5	19.6	L	T	.....	H	FS	Zen	G	...	M-E	.....	Bos	.....	Durs	...	3	M-E	Row	I	Torb	D	5.3	.....	Ros	.....	.....	Wan	.....	2500	120
D-Olt A	2450	H-Sp 7000	3½x5	19.6	L	T	GO	PT	S	Zen	V	Dup	B.B.	....	Bos	.....	Cott	...	4	Spic	SP	W	Timk	½Fl	8.25	.....	Ros	34x4	34x5	.....	.....	4500	168
Douglas G–1½	1750	Buda WU	3¾x5½	22.5	L	S	Own	PT	P	Sheb	V	....	Full	DP	Eis	.....	Full	U	3	Arv	Own	I	Torb	D	8	23.1	Ros	24x3½	34x5	Own	Fir	3725	126
Douglas GW	1750	Wei	3¾x5½	22.5	H	C	Own	PT	F	Sheb	V	....	B.B.	DP	Eis	.....	G-Le	U	3	Arv	Own	I	Torb	D	8	23.1	Ros	24x3½	34x5	Own	Fir	3725	126
Erie E-1½	.....	Buda CTU	3¾x5½	22.5	L	C	Fed	C	FS	Zen	V	....	Full	D	Bos	Bos	Full	A	3	Arv	Per	W	Shel	½Fl	7.8	31.2	Ros	36x6*	36x6*	Bim	Fir	4400	144
Federal TE	2175	Cont C4	4 1/16x5¼	27.2	L	C	Own	PT	FS	Zen	G	Phar	B.B.	DP	Eis	.....	Det	A	4	Spic	Mat	W	Timk	Flot	8.5	37.4	Gem	36x3½	36x5	Sch	Fir	4250	144
Forschler C	.....	Cont N	3½x5	19.6	L	C	Own	....	FS	Zen	V	Dup	Full	....	Bos	Op	Full	...	3	Hart	Own	W	Shel	....	.....	.....	Ros	36x3½	36x5	Smi	.....	3670	120
Front Drive C	2800	Buda CTU	3¾x5¼	22.5	L	C	EM	PT	S	Zen	G	Pier	B.B.	DD	Spl	Op	Own	A	3	Own	Own	W	Own	½Fl	8	32	Lav	34x5	34x5	Stn	.....	3200	Op
Garford 25 B	1990	Buda WU	3¾x5½	22.5	L	C	Own	Fin	S	Strm	V	....	....	DD	Spl	.....	Own	A	3	Spic	Per	W	Timk	½Fl	7.75	.....	Ros	36x3½	36x4	.....	.....	4000	135
Gersix M	3100	Buda ITU	4 x5½	25.6	L	C	Idl	C	F	Strm	V	Mon	B.B.	....	Bos	.....	Cott	U	3	Bld	Tut	W	Shel	.....	7.7	31	Ros	36x3½	36x6	Jon	.....	4620	142
Giant 15A	2250	Cont N	3¾x5	22.5	L	C	Idl	....	FS	Sheb	G	....	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	½Fl	7.8	24.97	Jac	34x3½	34x5	Way	.....	3450	138
Graham Brothers	1325	Dodge	3 1/16x4½	24	L	T	McC	PT	FS	Stew	V	.....	Dod	DD	NE	NE	Dod	U	3	Var	Det	S	Own	½Fl	6.28	29.29	Dod	33x4½*	36x6	.....	.....	2540	140
*Gramm-Pioneer 15	1750	Cont N	3¾x5	22.5	L	T	Own	Fin	S	Strm	G	.....	Full	DD	NE	NE	Full	U	3	Own	Per	I	Clark	D	7.6	30.4	Ros	36x3½	36x5	Bim	Fir	3660	138
*Gramm-Pioneer 65	2250	Cont N	3¾x5	22.5	L	T	Own	Fin	S	Strm	G	.....	Full	DD	NE	NE	Own	A	3	Own	Per	W	Eat	½Fl	7.8	28	Ros	36x3½	36x5	Bim	Fir	3860	138
*G. W. W. Farm Spec.	1650	Wei	3¾x5½	22.5	H	P	Chic	....	F	Sheb	G	.....	Full	....	Del	Del	Full	U	3	Acm	GC	I	Clark	D	7	.....	Woh	35x5	35x5	Roy	Fir	3200	142
Higrade B20	2500	Cont K4	4 1/16x5¼	27.2	L	G	Per	PT	FS	Zen	V	....	Full	DP	Eis	AL	Full	U	3	Bld	Per	W	Shel	.....	7.7	31	Lav	36x6	36x6	Det	Fir	3100	130
H R L.-R	3250	Hink HAA	4 x5¼	25.6	L	C	Fed	Fin	F	Zen	V	Hin	B-Li	DP	Bos	GD	B-Li	U	4	Spic	Shel	W	Shel	....	7.75	30	Ros	36x4	36x7	Sch	Gdy	4560	144
*Hug T	1350	Buda MU	3 5/16x5½	22½	L	C	Per	C	F	Zen	G	....	W-Gr	DP	Spl	.....	W-Gr	U	4	Bld	Tut	B	Clark	½Fl	5.5	26.62	Ros	34x5	34x5	Stn	Fir	2900	118
*Hurlburt A-A	1950	Buda IU	3¾x5	22.5	L	C	Own	Fin	FS	Zen	G	Dup	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Per	W	Own	....	7.5	.....	Ros	34x4	34x5	Way	.....	3000	148
Huron-Erie	2290	Buda CTU	3¾x5½	22.5	L	C	....	Fin	F	Zen	V	Pier	B.B.	D	Bos	.....	Cott	U	4	Det	Det	I	Clark	D	7	36.4	Jac	35x5*	38x7*	AuW	Fir	.....	144
Independent G (Iowa)	2040	Cont J	3¾x5	22.5	L	C	GC	PT	FS	Strm	V	....	Full	DD	Bos	.....	Full	U	3	Bld	GC	W	Russ	D	8.2	.....	Lav	34x3½	34x5	StM	Fir	3875	142
*Indiana 12	.....	Wau BUX	3¾x5½	22.5	L	C	McC	Fin	F	Strm	G	Wau	B.B.	DP	Eis	.....	B-Li	A	3	Spic	Shel	W	Shel	½Fl	7.8	31.2	Woh	34x3½	34x5	Bim	.....	4100	146
International 31	1650	Own	3½x5½	19.6	L	C	Own	Fin	FS	Ens	G	Own	Own	DP	Ros	Own	Own	A	3	Own	.....	I	Own	D	8	26.5	Own	.....	.....	Own	.....	3190	128
Kalamazoo GI	1800	Cont N	3¾x5	22.5	L	T	GO	C	FS	Strm	V	Pier	Full	D	Eis	Dy	Full	A	4	B.B.	Shel	W	Wis	½Fl	8.5	40.8	Ros	34x4	34x5	Bim	.....	4450	144
Kalamazoo LG	2645	Wis SU	4 x5	25.6	H	P	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Ful	A	4	B.B.	Shel	W	Shel	½Fl	8.6	40.8	Ros	36x4	36x7	Smi	.....	5080	144
*Kelly-Springfield K31	2700	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	3	Own	Per	C	Own	D	8.6	31.58	Gem	36x3½	36x6	StM	.....	4475	Op
Kelly-Springfield K34	2700	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	3	Spic	Per	W	Own	½Fl	8.6	31.58	Gem	36x3½	36x6	StM	.....	4670	Op
Kissel General Utility	1975	Own 40000	3 1/16x5½	24.1	L	C	McC	PT	S	Strm	G	Pier	W-Gr	DP	Eis	.....	W-Gr	U	3	Spic	Mat	W	Shel	½Fl	7.8	28.5	Jac	36x3½	36x5	Pru	.....	4100	152
Kleiber A	.....	Cont K4	4 1/16x5¼	27.2	L	C	Per	C	FS	Strm	G	Sim	....	DD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	½Fl	7.1	37.51	Ros	36x3½	36x6	Smi	.....	5200	143
Koehler D	2150	H-Sp	3½x5	19.6	L	C	Own	PT	F	Zen	G	Sim	B-Li	D	Spl	.....	....	U	3	.....	Math	W	Dun	½Fl	7.25	.....	Lav	34x3½	34x5	Way	.....	3600	137
*Larrabee I4	.....	Cont I4	3¾x5	22.5	L	C	R-T	PT	F	Zen	G	Phar	B-Li	DD	Bos	.....	B-Li	U	3	.....	Shel	W	Shel	½Fl	7.66	31.4	Gem	34x3½	34x5	Hoo	.....	4500	138
*Luedinghaus W	2490	Wau BUX	3¾x5½	22.5	L	G	Own	Pit	FS	Sheb	G	Wau	B.B.	D	Spl	.....	Det	U	3	Spic	Tut	W	Wis	½Fl	8.6	26.6	Lav	34x3½	34x5	StM	.....	4100	144
Maccar L	.....	Cont C4	4 1/16x5¼	27.2	L	C	Own	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Mer	W	Timk	½Fl	8.75	46.81	Ros	36x4	36x6	Day	Fir	4800	150
Mack AB1½	3000	Own AB	4 x5	25.6	L	C	Own	C	S	Zen	G	Own	Own	DD	Spl	.....	Own	U	4	Spic	Mer	C	Own	D	6.9	28.01	Own	36x4	36x3½†	.....	.....	5000	Op
Mack AB1½	3450	Own AB	4 x5	25.6	L	C	Own	C	S	Zen	G	Own	Own	DD	Spl	.....	Own	U	4	Spic	Mer	R	Own	Flot	7.6	30.40	Own	36x4	36x3½†	.....	.....	5100	Op
Master JW	2290	Buda OU	4 1/16x5½	27.2	L	C	Chic	PT	S	Mas	V	McC	Full	DP	Eis	.....	Full	U	3	Spic	Det	W	Timk	½Fl	Opt	Opt	Ros	34x3½	34x5	Pru	.....	3900	142
Master JWL	2365	Buda OU	4 1/16x5½	27.2	L	C	Chic	PT	S	Mas	V	McC	Full	DP	Eis	.....	Full	U	3	Spic	Det	W	Timk	½Fl	Opt	Opt	Ros	34x3½	34x5	Pru	.....	3900	160
Master JD	2590	Buda OU	4 1/16x5½	27.2	L	C	Chic	PT	S	Mas	V	McC	Full	DP	Eis	.....	Full	U	3	Spic	Det	W	Walk	Flot	Opt	Opt	Ros	34x3½	34x5	Walk	.....	3900	142
Master JDL	2665	Buda OU	4 1/16x5½	27.2	L	C	Chic	PT	S	Mas	V	McC	Full	DP	Eis	.....	Full	U	3	Spic	Det	W	Walk	Flot	Opt	Opt	Ros	34x3½	34x5	Walk	.....	3900	160
Maxwell	.....	Own	3¼x4½	21.	L	C	Own	PT	FS	Eag	G	....	....	....	....	.....	Own	U	3	Own	.....	W	Own	½Fl	7.25	34.4	Own	35x5	35x5	Kel	Fir	2385	124
Menominee H	2475	Wis EAU	4 x5	25.6	L	T	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	U	3	Spic	Tut	W	Wis	½F	8.25	30.36	Ros	36x3½	36x5	Stn	Fir	4220	144
Moline 10	1695	Own NT	3½x5	19.6	H	T	Mod	C	F	Till	G	Phar	....	DP	Spl	.....	Own	U	3	Arv	Matb	I	Torb	....	8	38	Ros	34x5*	36x6*	.....	Fir	.....	130
*Moreland EX	2800	Cont K4	4 1/16x5¼	27.2	L	T	Own	C	F	Mas	P	....	Own	DD	Spl	.....	Own	A	4	Ther	US	W	Timk	½Fl	7	33.88	Ros	36x3½	36x8	Smi	.....	4975	126
Napoleon 11	1860	Vict T	3½x5	19.6	H	T	Own	PT	F	Scoe	G	....	Full	D	Bos	Bos	Full	U	3	Bld	Math	I	Keno	D	8	24	Lav	35x5*	36x6*	Roy	Fir	3450	133
Nelson-LeMoon G2	.....	Cont K4	4 1/16x5¼	27.2	L	C	Chic	Fin	F	Strm	G	Phar	B-Li	DD	Bos	W	B-Li	U	3	Own	Tut	W	Timk	½Fl	7	.....	Ros	36x3½	36x6	Pru	Gdy	3400	Op
Noble B–31	2480	Buda CTU	3¾x5¼	22.5	L	C	Chg	Fin	F	Strm	V	Pier	Full	DP	Eis	W	Full	U	4	ME	.....	W	Shel	½Fl	8.66	41.5	Lav	36x4	36x7	Bim	Fir	4750	156
Norwalk	1925	Lyco K	3½x5	19.6	L	T	Stan	C	FS	Zen	V	....	B.B.	D	Del	Dy	G-Le	U	3	UM	SPar	W	Shel	¾Fl	7.75	.....	CAS	34x3½	34x5	E&O	Fir	3200	143
Norwalk 35 E Special	2285	Buda CTU	3¾x5¼	22.5	L	T	Stan	C	FS	Zen	V	....	B.B.	D	Del	Dy	G-Le	U	3	Spic	Stan	W	Shel	¾Fl	7.2	.....	Det	34x4*	34x5	E&O	Fir	3450	150
Ogden D1½	.....	Cont N	3¾x5	22.5	L	T	Chic	Fin	FS	Strm	G	Pier	B-Li	DD	Spl	.....	B-Li	U	3	M-E	Tut	W	Timk	½Fl	8.75	.....	Ros	36x3½	36x5	Stn	.....	3400	136
O. K. 1½T	2000	Buda ITU	4 x5½	25.6	L	G	R-T	PT	FS	Zen	V	Pier	Full	DD	Eis	.....	Full	U	3	Hart	Cham	W	Wis	½Fl	8.25	24.8	Ros	36x3½	36x5	Bim	.....	4310	146
Old Reliable A	2350	WisEU	4 x5	25.6	L	C	Chic	PT	F	Strm	V	Mon	Full	DD	Bos	Op	Full	U	3	Spic	Shel	W	Shel	½Fl	7.7	24.94	Ros	34x3½	36x6	StM	.....	4150	138
*Paige 52-19	1950	Hin 400	4 x5¼	25.6	L	C	Own	Fin	F	Strm	V	Hink	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Per	W	Timk	½Fl	7.7	37.51	Ros	34x3½	34x5	Own	Fir	4000	140
Pittsburgher A	3000	Own	3½x5	21.2	T	C	GO	Fin	F	Strm	V	....	B-Li	DP	Bos	.....	B-Li	U	4	Spic	C	W	Own	....	8.75	46.8	Ros	36x4	36x7	Smi	.....	5000	152
*Power F	3150	Hink HA400	4 x5¼	25.6	L	C	GO	PT	F	Zen	V	Hin	Full	DD	Eis	W	Full	U	4	Arv	Row	W	Vul	F	7.75	37.2	Ros	36x5	36x7	StM	Fir	5300	150
Premocar	2350	Lyc-K	3½x5	19.6	L	T	....	C	S	Zen	V	....	BB	....	Del	Dyn	G-L	U	3	Spic	Shel	W	Timk	½Fl	7	.....	Dit	36x6	36x6	.....	Fir	4200	130
Rainier R26	2490	Cont J-4	3¾x5	22.5	L	C	EM	Fin	FS	Zen	V	Pier	B-Li	DP	Eis	.....	B-Li	U	3	Spic	Per	W	Shel	.....	7.8	.....	Ros	34x3½	34x5	.....	Fir	3600	147
Reliance 10A	2400	Buda ITU	4 x5½	25.6	L	T	Bus	PT	FS	Strm	G	Pier	Full	DD	Eis	.....	Full	U	3	Pet	Shel	P	Badg	D	6.6	26.4	Ros	36x3½	36x5	Bim	Gdy	4500	150
*Republic 11X	1795	Cont N3¾	3¾x5	22.5	L	C	Own	C	FS	Strm	G	....	Full	DD	Bos	.....	Full	U	3	Hart	Math	I	Torb	D	8	18.84	Jac	34x3½	34x6	Nor	Fir	3656	144
Rowe CW1½	3000	Wis CAU	3¾x5	22.5	L	C	Fed	H	F	Zen	G	Sim	B-Li	DD	Bos	.....	B-Li	U	4	Spic	Shel	W	Shel	½Fl	6.5	26	Ros	36x6*	36x6*	Hoo	.....	3800	133
Rumely A	1990	Buda CTU	3¾x5¼	22.5	L	C	Mod	ZZT	F	Strm	G	Pier	Full	DD	Ber	.....	Full	U	3	Bld	Mat	W	Shel	½Fl	7.8	31.2	Gem	36x3½	36x5	Mot	Gdy	4100	144
Selden Unit 30	2250	Cont N	3¾x5	22.5	L	T	Lng	Fin	FS	Strm	G	Pier	B-Li	D	Eis	.....	B-Li	U	3	Spic	Per	W	Timk	½Fl	7	23.31	Lav	34x3½	34x5	Arc	.....	3560	137
Service 21	.....	Buda R U	3½x5½	19.6	L	T	Lng	Fin	FS	Strm	V	....	Full	DD	Eis	.....	Full	U	3	Arv	Shel	W	Timk	½Fl	7.75	23.25	Ros	34x3½	34x5	Bim	.....	3450	137
*Signal H	1950	Cont C4	4 1/16x5¼	27.2	L	C	McC	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	½Fl	7.75	31	Ros	34x4	36x6	St.M	.....	4760	146
Southern 15	2590	Cont N	3¾x5	22.5	L	C	R-T	PT	S	Zen	V	Pier	Full	DD	Bos	.....	Full	U	3	.....	Shel	W	Shel	.....	.....	.....	Ros	36x6	38x7	.....	.....	.....	144
Standard 1K	1600	Cont N	3¾x5	22.5	L	C	Lng	Fin	F	Strm	V	....	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Per	W	Timk	½Fl	7.2	23.97	Ros	34x3½	34x5	.....	Opt	3466	134
Sterling 1½	2885	Ster FU	4x5¾	25.6	L	C	Own	PT	F	Zen	V	Wau	B-Li	DD	Eis	.....	B-Li	U	4	Spic	Mat	W	Timk	½Fl	7	37.45	Ros	36x3½	36x5	Pru	.....	4750	142
Stewart 9	1790	Cont N¾	3¾x5	22.5	L	T	Bus	PT	FS	Zen	G	....	Full	DP	Eis	.....	Full	U	3	Hart	Det	I	Clark	D	7.6	22.8	Gem	34x3½†	34x6	Way	Fir	3440	140
Stoughton B	2150	Wau BUX	3¾x5¼	22.5	L	C	Own	Fin	FS	Strm	G	Wau	B-Li	DD	Eis	.....	B-Li	U	3	Ther	Own	W	Shel	½Fl	7.8	31.2	Lav	36x3½	36x5	Roy	Gdy	3800	140
Tiffin GW	2100	Cont C4	4 1/16x5¼	27.2	L	C	Own	Fin	FS	Sheb	G	Pier	Full	DD	Bos	W	Full	U	3	Pet	Kal	W	Shel	½Fl	7.7	23.25	Ros	36x3½	36x5	Smi	.....	3750	135
Tower J1½	2175	Cont C4	4 1/16x5¼	27.2	L	C	Own	PT	S	Zen	G	....	Full	DP	Eis	.....	Full	U	3	Bld	Det	W	Timk	½Fl	7.25	29	Ros	35x5*	38x7*	Pru	Fir	4520	142
Traffic-Speedboy	1595	Cont N4	3¾x5	22.5	L	T	Own	C	FS	Cart	G	....	Covt	DP	Bos	GD	Covt	U	3	Ther	Det	I	Russ	D	6.15	22.5	Own	35x5*	35x5*	Day	Fir	3400	128
Transport 25	1495	Buda WU	3¾x5½	22.5	L	C	.....	.....	F	Strm	V	....	Full	DP	Eis	.....	Full	...	3	Sned	Det	I	Clark	.....	7.25	21.7	Jac	34x3½	34x5	.....	.....	3700	130
Traylor B	2390	Buda WU	3¾x5½	22.5	L	C	GO	Fin	F	Zen	G	Sim	Covt	DD	Spl	.....	Covt	U	3	M-E	Mer	W	Shel	½Fl	7.8	...	Ros	34x3½	34x6	Sch	.....	4000	140
*Triangle A	1985	Wau BUX	3¾x5½	22.5	L	C	Per	ZZT	FS	Strm	G	Wau	Full	DD	Eis	.....	Full	U	3	UP	Det	I	Clark	D	7.25	29	Gem	34x3½	34x6	Roy	Fir	3750	144
Triumph	1950	Buda MU	3¾x5½	31	L	C	Mod	PT	F	King	V	Pier	B.B.	D	Spl	.....	Cott	U	4	UP	Tut	W	Wis	½Fl	7.25	.....	Lav	36x3½	36x5	Stu	Stu	.....	132

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23		
2 Ton—Con'd																																	
Southern 20	2990	Buda HTU	4¼x5½	28.9	L	C	Own	PT	S	Zen	V	Pier	Full	DD	Bos	.....	Full	U	4	.....	Shel	W	Shel	.....	.....	.....	Ros	36x4	40x8	.....	.....	.....	150
Sterling 2	3085	Ster FU	4x5¼	25.6	L	C	Own	PT	F	Zen	V	Wau	B-Li	DD	Eis	.....	B-Li	U	4	Spic	Mat	W	Timk	Flot	7.7	41.19	Ros	36x4	36x6	Pru	.....	5725	142
Stewart 7	2190	Cont C2	4½x5¼	27.2	L	C	G	Bus	Fin	FS	Zen	G	Pier	Full	DP	Eis	.....	Full	U	3	Hart	Det	I	Clark	D	9	27	Ros	34x4†	34x8	Cla	Gdy	4460	156
Stoughton D	2490	Her CU3	4 x5½	25.6	L	C	Own	Fin	F	Strm	G	Dup	B-Li	DD	Eis	.....	B-Li	U	4	Ther	Own	W	Shel	½Fl	8.66	35	Ros	36x4	36x7	Roy	Gdy	4600	140
Superior E	2600	Cont C2	4½x5¼	27.2	L	A	Idl	C	F	Strm	V	Pier	Full	DD	Eis	.....	Full	U	3	Arv	Tut	I	Torb	D	9	23.2	Ros	36x4	36x6	Sch	Fir	3600	144
Titan 2	.....	.....	4 x5½	25.6	L	C	BW	PT	F	Strm	G	Sim	B.B.	DD	Eis	.....	Cott	U	4	Pet	Shel	I	Own	D	8	42	Woh	34x4	36x7†	Bim	.....	4400	156
*Traffic 4000C	1595	Cont N4	3¾x5	22.5	L	T	Own	C	FS	Cart	G	.....	Covt	DP	Bos	.....	Covt	U	3	Ther	Det	I	Russ	D	7	25.62	Own	34x3½	34x5	Opt	Fir	3175	132
Transport 35	1885	Cont N	3¾x5	22.5	L	T	.....	.....	FS	Strm	G	Dup	Full	DP	Eis	.....	Full	...	4	Hart	Det	I	Clark	.....	7.6	36.4	Jac	36x3½	36x6	.....	.....	4000	140
Traylor C	2850	Buda ITU	4 x5½	25.6	L	P	GO	Fin	F	Zen	G	Pier	Covt	DD	Spl	.....	Covt	U	3	M-E	Mer	W	Shel	½Fl	7.75	.....	Ros	36x4	36x7	Sch	.....	5100	146
*Triangle C	2285	Wau BUX	3¾x5¼	22.5	L	C	Per	ZZT	FS	Strm	G	Wau	Full	DD	Eis	.....	Full	U	3	UP	Det	W	Clark	D	9.1	36	Gem	36x4	36x7	Roy	Fir	4200	147
Triumph 2	2550	Buda CTU	3¾x5¼	22.5	L	C	Mod	PT	F	Kng	V	Pier	B.B.	D	Spl	.....	Cott	U	4	UP	Tut	W	Wis	½Fl	7.75	40.3	Lav	36x4	36x7	Stn	Stn	5000	144
Twin City	2750	Buda ITU	4 x5½	25.6	L	C	Spi	H	F	Sheb	V	Sim	Full	D	Bos	.....	Full	U	3	Arv	Math	I	Clark	D	8	32	Ros	36x6	40x8	Bim	Fir	4800	150
Ultimate AJ	3200	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	½Fl	6.5	34.7	Ros	35x5*	38x7*	Jon	Fir	4500	140
Ultimate AJL	3250	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	½Fl	6.5	34.7	Ros	35x5*	38x7*	Jon	Fir	4590	156
Vim 22	3150	Her C2	3¾x5½	22.5	L	T	MoC	Fin	F	Zen	G	Dup	B-Li	D	Spl	....	B-Li	U	4	Spic	Shel	W	Shel	.....	7.75	.....	Gem	36x4	36x6	Smi	.....	4700	142
Walker-Johnson A	2250	Buda WU	3¾x5½	22.5	L	T	Bus	Fin	F	Zen	V	.....	Full	DD	Eis	.....	Full	U	3	Spic	SP	W	Timk	½Fl	7.75	.....	Ros	34x3½	34x6	Jon	.....	4150	140
*Walter N	3500	Own FU	4 x5¼	25.6	L	C	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	B-Li	A	4	Own	.....	.....	Own	Flot	7.25	36	Gem	36x4	36x7	.....	.....	5500	144
White 20	3250	Own	3¾x5½	22.5	L	C	.....	C	FS	Own	G	.....	Own	D	...	.....	Own	A	4	Own	....	R	Own	½Fl	.....	.....	Own	36x4	36x7	.....	.....	4500	157
Wichita M	2400	Wau BX	3¾x5¼	22.5	L	C	.....	PT	F	Strm	G	Wau	Own	C	Wag	....	B-Li	A	4	Own	Det	W	Shel	½Fl	8.6	45.03	Ros	36x3½	36x6	Bim	Fir	4400	144
Wisconsin (Loganville)	1450	HSp 7000	3½x5	19.6	L	.....	.....	.....	.....	.....	.....	.....	B.B.	WP	Bos	Dy	Det	U	3	UP	Har	I	Torb	D	8	.....	Lav	34x5*	36x6*	.....	.....	3200	136
*Witt Will P	2900	Cont C4	4¼x5¼	27.2	H	G	Mod	Opt	FS	Zen	G	Pier	B-Li	DD	Eis	. .	B-Li	U	3	Spic	Del	W	Tim	Flot	7.75	.....	Ros	36x4	36x8	Arc	.....	5000	144
Wolverine J2	2245	Cont J4	3¾x5	22.5	L	G	Lng	Fin	F	Strm	G	Phar	Full	DD	Dix	AL	Full	U	3	UP	Am	I	Russ	D	8.8 *	35.2	Gem	34x4	34x7	Hay	Gdy	4300	148
2½ Ton																																	
Acason H	.....	Wau CU	4½x5¼	30.6	L	P	Can	C	FS	Sheb	V	Wau	Det	...	Eis	....	Cott	A	4	Bld	Det	W	Timk	Flot	7.75	40.3	Ros	36x4	36x8	Sch	Opt	5400	150
Ace 2½	.....	Buda HU	4¼x5½	28.9	L	C	GO	ZZT	F	Zen	V	Pier	Full	DP	Eis	W	Full	A	4	UM	Math	W	Timk	Flot	8.50	34	Ros	36x4	36.7	Day	Fir	5630	156
*Acme 60	.....	Cont K4	4½x5¼	27.2	L	C	GO	Fin	F	Rayf	V	Dup	B.B.	DP	Eis	DJ	Cott	U	4	Bld	Det	W	Timk	Flot	9.25	48.10	Ros	36x4	36x7	Bim	.....	4830	152
American	3350	Wis	4 x6	25.6	L	G	GO	Fin	F	Strm	G	Own	Det	D	Apo	....	Cott	U	4	Acm	SP	W	Thom	Flot	8.33	.....	Ros	36x4	34x4†	.....	.....	5000	158
Apex E	2695	Buda HU	4¼x5½	28.9	L	G	GO	C	F	Strm	V	Dup	Full	D	Eis	Op	Full	U	3	Bld	Det	I	Torb	D	9	27	Lav	36x4	36x6	Roy	Fir	4500	150
Armleder HWB	3200	Buda HTU	4¼x5½	28.9	L	P	Lng	Fin	F	Zen	G	Phar	B-Li	DD	Bos	W	B-Li	U	4	Spic	Math	W	Timk	Flot	9.25	49.5	Ros	36x4	36x7	StM	.....	4900	148
Armleder HWC	3200	Cont C4	4¼x5¼	27.2	L	P	Lng	Fin	S	Zen	G	Phar	B-Li	DD	Bos	W	B-Li	U	4	Spic	Math	W	Timk	Flot	9.25	49.5	Ros	36x4	36x7	StM	.....	4900	148
Atco A	.....	Bud HU	4¼x5½	28.9	L	C	Chic	PT	F	Strm	G	Pier	Full	D	Eis	.....	Full	A	4	Hart	Shel	W	Wis	....	8.7	41.6	Ros	36x4	36x7	Smi	.....	4900	150
Atterbury 22C Std	3375	Cont K4	4⅛x5¼	27.2	L	C	Own	Fin	F	Zen	V	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	9.25	49.48	Gem	36x4	36x4	Arc	Fir	5670	156
Atterbury 22C LWB	3475	Cont K4	4⅛x5¼	27.2	L	C	Own	Fin	F	Zen	V	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	9.25	49.48	Gem	36x4	36x4	Arc	Fir	5830	180
Available 2½	3160	Her CU3	4 x5½	25.6	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	7.75	40.3	Ros	36x4	36x8	Sch	.....	4750	152
Bell O	2550	Buda	4¼x5½	28.9	L	C	Chic	PT	F	Strm	V	Dup	B.B.	DP	Eis	.....	Det	U	3	UP	Det	1	Russ	D	8	38.4	Gem	34x4	34x7	Bim	Fir	4200	146
Bessemer J2	.....	Cont C2	4½x5¼	27.2	L	C	Std	C	FS	Strm	G	Pier	B.B.	DP	Bos	.....	B-Li	A	4	Arv	Per	R	LM	½Fl	.....	.....	Ros	36x4	36x4†	Sch	Fir	4800	158
Bridgeport 2½B	2990	Buda HTU	4¼x5½	28.9	L	G	Own	Fin	FS	Strm	G	Pier	B.B.	D	Eis	.....	B-Li	U	4	Hart	Per	W	Timk	Flot	8.25	.....	Ros	36x4	36x4†	Jon	Fir	5500	156
Brinton D	2975	Cont C4	4½x5¼	27.2	L	C	Chic	PT	F	Strm	G	Pier	B-Li	D	Bos	.....	B-Li	U	3	Spic	Tut	W	Timk	Flot	.....	33.6	Ros	36x4	36x6	Smi	.....	4900	150
Brockway K5	.....	Cont K4	4½x5¼	27.2	L	C	Bus	Fin	F	Strm	V	Phar	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mer	W	Timk	Flot	7.75	41.5	Gem	36x4	36x8	Hoo	.....	5260	153
Chicago C2½	.....	Her CU3	4 x5½	25.6	L	C	Brm	PT	F	Strm	G	Sim	B-Li	D	Bos	.....	B-Li	U	4	Pet	Math	W	Timk	Flot	7.75	34	Gem	36x4	36x7†	Opt	Stn	5200	156
*Clydesdale 65EX	3450	Cont	4½x5½	32.4	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	8.5	45.5	Ross	36x4	36x4†	Smi	.....	5400	163
*Clydesdale 65 X	3250	Cont	4½x5¼	27.2	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	8.5	45.5	Ros	36x4	36x4†	Smi	.....	5140	163
Collier 22	.....	Cont C4	4½x5¼	27.2	T	P	Lng	PT	FS	Zen	V	Pier	Full	DP	Eis	.....	Full	U	4	UP	Math	W	Timk	Flot	8.5	40.8	Ros	36x4	36x4†	Bim	Fir	5445	165
Commerce 25B	2770	Cont K4	4⅛x5¼	27.2	L	P	Lng	Fin	F	Zen	V	.....	B-Li	DP	Eis	Bj	B-Li	A	4	Spic	Am	W	Tim	Flot	7.75	41.46	Ros	36x6	40x8	Bim	Fir	5200	156
Concord B	3600	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Zen	G	Mon	B-Li	DP	Eis	.....	B-Li	U	4	Spic	Per	W	Timk	Flot	9.25	37	Ros	36x4	36x8	Arc	Fir	5450	150
Corbitt B-22	3000	Cont C4	4½x5¼	27.2	L	C	McC	Fin	FS	Strm	V	Sim	B-Li	DD	Eis	.....	B-Li	U	4	Hart	Shel	W	Shel	½Fl	8.75	35	Ros	36x4	36x7	Bim	Fir	5325	152
Dart M	.....	Buda HU	4¼x5½	28.9	L	C	Own	C	F	Zen	G	Pier	Full	DD	Eis	.....	Full	U	4	Spic	Per	W	Own	.....	8.5	40.8	Ros	36x4	36x7	Pru	.....	4800	150
Day Elder C	2750	Buda HTU	4¼x5½	28.9	L	C	Bus	Fin	F	Zen	G	Mon	Covt	DD	Eis	.....	Covt	U	4	Hart	IC	W	Shel	½Fl	8.75	41.56	Gem	36x4	36x7	Jon	Fir	4600	150
Dependable D	2650	Buda ITU	4 x5½	25.6	L	C	Lng	Fin	F	Zen	V	Mon	Full	DD	Spl	AL	Full	U	3	Acm	Per	W	Wis	½Fl	8.5	35.75	Ros	36x4	36x7	Bim	Fir	5300	144
Diamond T–U	2650	Hin	4 x5¼	25.6	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	.....	Covt	U	4	Spic	Math	W	Timk	Flot	7.8	36.81	Gem	36x4	36x7	.....	.....	4800	160
D-Olt C	3250	Midwest	4½x5¼	27.2	H	C	G-O	PT	F	Zen	G	Dup	B-Li	DD	Bos	.....	B-Li	U	3	Spic	SP	W	Timk	.....	8.5	.....	Ros	36x5	36x4†	.....	.....	5350	168
Erie A2½	.....	Buda ETU	4¼x5½	28.9	L	C	Fed	C	FS	Zen	G	Dup	Full	D	Bos	.....	Full	A	4	Spic	Per	W	Shel	½Fl	8.7	41.7	Ros	36x4	36x4†	Bim	Fir	5760	150
Facto	2295	Buda ETU	4¼x5½	28.9	L	C	Bus	PT	FS	Zen	V	Pier	Full	D	Spl	.....	Full	A	4	Spic	SP	W	Timk	Flot	7.75	33.9	Ros	36x4	36x8	Smi	Fir	5800	155
Garford 70 H	2750	Buda HTU	4¼x5½	28.9	L	C	Own	Fin	F	Strm	G	Sim	...	DD	Spl	.....	Own	A	4	Spic	Per	W	Timk	Flot	7.75	.....	Ros	36x4	36x7	.....	.....	5300	144
Gary J	2650	Buda HTU	4¼x5½	28.9	L	C	Chic	Fin	FS	Mas	G	McC	Full	DD	Eis	.....	Full	U	4	Spic	Math	W	Timk	Flot	8.5	41	Ros	36x4	36x8	Pru	Gdy	4850	148
Gersix K	3500	Buda HTU	4¼x5½	28.9	L	C	Idl	C	F	Strm	V	Mon	B.B.	.....	Bos	.....	Cott	U	3	Bld	Tut	W	Own	.....	9.6	39	Ros	36x4	36x8	Jon	.....	5270	150
Giant 16	3150	Cont C4	4½x5¼	27.2	L	P	Own	.....	FS	Sheb	G	Mon	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	Flot	8.8	29.09	Ros	36x4	36x7	Way	.....	4500	168
Giant 16	3050	Cont C4	4½x5¼	27.2	L	P	Own	.....	FS	Sheb	G	Mon	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	Flot	8.8	29.9	Ros	36x4	36x7	Way	.....	4500	144
Hall 2½ Worm	.....	Cont C4	4¼x5¼	27.2	L	P	Own	H	FS	Zen	G	Dup	B-Li	DP	Bos	.....	B-Li	U	3	Opt	Det	W	Timk	Flot	7.7	.....	Gem	36x4	36x4	Smi	.....	4525	156
Harvey WFA	2950	Buda ETU	4¼x5½	28.9	L	C	Own	Fin	F	Strm	G	McC	Full	DD	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	7.75	37.5	Ros	36x4	36x7	StM	.....	5600	160
Hendrickson N	2690	Buda ETU	4¼x5½	28.9	L	C	Chic	PT	F	Strm	G	McC	Full	D	Spl	.....	Full	A	4	Ther	Tut	W	Timk	Flot	7.7	37.2	Ros	36x4	36x7	Stn	.....	.....	Op
H. R. L., H	3650	Hink HAA	4 x5¼	25.6	L	C	Fed	Fin	F	Zen	V	Hink	B-Li	DP	Bos	GD	B-Li	U	4	Spic	Shel	W	Shel	.....	8.75	30.	Ros	36x4	36x4†	Sch	Gdy	5310	154
*Hurlburt BB	2800	Buda HU	4¼x5½	28.9	L	C	Own	Fin	F	Zen	G	Sim	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Per	W	Own	.....	7.5	.....	Ros	36x4	36x4†	Way	.....	5000	148
Huron-Michigan	2790	Buda ETU	4¼x5½	28.9	L	C	.....	Fin	F	Zen	V	Pier	B.B.	D	Bos	.....	Cott	U	4	Det	Det	I	Clark	D	8	41.6	Jac	36x6*	40x8*	AuW	Fir	.....	156
*Independent HI (Iowa)	2940	Cont K4	4½x5¼	27.2	L	C	Chic	PT	FS	Strm	V	..	Full	DD	Bos	....	Full	U	4	Bld	Tut	I	Russ	D	10	.....	Lav	36x4	36x7	StM	Fir	4950	156
Indiana 25	.....	Own 38	4½x5½	27.2	L	C	MoC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	7.75	41.3	Woh	36x4	36x8	Day	.....	5850	156
International 52-Bus	3200	Own	4¼x5	28.9	H	T	Own	Fin	FS	Ens	V	Own	Own	DP	Spl	Own	Own	A	4	Own	.....	I	Own	D	4.85	28.8	Own	.....	.....	Own	.....	.....	190
Kalamazoo HD	3350	Wis UAU	4¼x6	28.9	L	P	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Full	A	4	B.B.	Shel	W	Shel	½Fl	9.5	57	Ros	36x5	36x10	Smi	.....	6720	144
Kalamazoo NH	3145	Wis TAU	4 x6	25.6	L	P	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Full	A	4	B.B.	Shel	W	Shel	½Fl	8.75	42.8	Ros	36x5	36x10	Smi	.....	6400	160
*Kelly Springfield K35	2900	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	3	Own	Per	C	Own	D	10.6	35.11	Gem	36x4	36x4†	StM	.....	4850	Op
*Kelly Springfield K38	2900	Own	3¾x5½	22.5	L	C	Lng	Fin	F	Zen	G	Pier	B&B	D	Eis	W	Covt	A	4	Spic	Per	W	Own	½Fl	10.3	34.2	Gem	36x4	36x4†	StM	.....	5300	Op
Kimball AC	3975	Wis UAU	4¼x6	28.9	L	C	Flex	PT	F	Zen	V	Sim	B-Li	DP	Spl	W	B-Li	A	4	Spic	US	W	Shel	½Fl	7.75	37.31	Ros	36x4	36x8	Smi	Fir	5000	Op
Kissel Freighter	2875	Own 50000*	4¼x5½	28.9	L	C	MoC	PT	S	Strm	V	Pier	W-Gr	DP	Eis	.....	W-Gr	A	4	Spic	Mat	W	Timk	Flot	8.5	42.5	Jac	36x4	36x7	Pru	.....	5100	168

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrang't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment *	Chassis Weight (Stripped)	Wheelbase
3 Ton—Con'd		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23		
Ultimate BL	3800	Buda HTU	4¼x5¼	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	½Fl	7.75	30.2	Ros	36x4	36x8	Jon	Fir	5590	178
U. S., R.	.....	Own	4 x5¼	25.6	L	C	Lng	Fin	F	Strm	G	Own	B-Li	DD	Eis	Op	B-Li	A	4	Opt	Shel	W	Shel	½Fl	8.7	41.5	Lav	36x4	36x4†	Sch	.....	5500	156
Vim 23	3950	Her M2	4¼x5½	28.9	L	P	McC	Fin	F	Zen	G	Dup	B-Li	D	Spl	.....	B-Li	A	4	Spic	Shel	W	Shel	.....	7.75	.....	Gem	36x5	36x5†	Smi	.....	6370	175
Wichita RX	3200	Wau CU	4½x5¼	30.6	L	G	.....	PT	F	Strm	G	Wau	Own	C	Wag	.....	B-Li	A	4	Own	Det	W	Shel	½Fl	8.75	45.5	Ros	36x4	36x8	Smi	Fir	5900	160
*Winther 51	.....	Wis TAU	4 x6	25.6	L	P	Brm	PT	F	Mas	V	.....	BB	DP	Eis	W	B-Li	A	4	Bld	Math	I	Clark	D	8	40	Ros	36x4	36x4†	Own	.....	5300	150
Wolverine K3	2910	Cont K	4¼x5¼	27.2	L	G	Lng	Fin	F	Strm	G	Phar	Full	DD	Spl	AL	Full	U	4	UP	Am	I	Russ	D	9.4	45	Ros	36x4	36x8	Cla	Gdy	5600	168
3½ Ton																																	
Acason L	.....	Wau CU	4½x5¼	30.6	L	G	Can	C	FS	Sheb	V	Wau	Det	.....	Eis	.....	Cott	A	4	Bld	Det	W	Timk	Flot	8.75	48.5	Ros	36x5	36x5†	Smi	Opt	7000	180
Apex F	3975	Buda YTU	4½x6	32.4	L	C	GO	C	F	Strm	V	Dup	Full	D	Eis	Opt	Full	A	4	Bld	Det	I	Torb	D	10.5	.....	Woh	36x5	36x10	Roy	Fir	6940	168
Armleder KW	4150	Buda YTU	4½x6	32.4	L	P	Own	Fin	F	Zen	G	Phar	B-Li	DD	Bos	.....	B-Li	U	4	Spic	Math	W	Timk	Flot	10.33	55.25	Ros	36x5	36x5†	StM	.....	6900	156
Armleder K W	4150	Cont E4	4½x5½	32.4	L	P	Own	Fin	S	Zen	G	Phar	B-Li	DD	Bos	.....	B-Li	U	4	Spic	Math	W	Timk	Flot	10.33	55.25	Ros	36x5	36x5†	StM	.....	6900	156
Atterbury 22DX Short	4375	Cont L4	4½x5½	32.4	L	C	Own	Fin	F	Zen	V	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	10.33	55.26	Gem	36x5	40x5†	Arc	.....	7180	150
Atterbury 22D Std	4275	Cont L4	4½x5½	32.4	L	C	Own	Fin	F	Zen	V	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	10.33	55.26	Gem	36x5	40x5†	Arc	.....	7500	174
Atterbury 22D LWB	4375	Cont L4	4½x5½	32.4	L	C	Own	Fin	F	Zen	V	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	10.33	55.26	Gem	36x5	40x5†	Arc	.....	7820	198
Autocar Y	3950	Own Y	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x5	36x10	Hoo	.....	7000	120
Autocar B	4100	Own B	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x5	36x10	Hoo	.....	7150	156
Available H3½	4175	Her MU3	4½x5½	32.4	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	10.33	49.99	Ros	36x5	40x5†	Sch	.....	6500	176
Bridgeport 4C	3990	Buda YTU	4¼x6	32.4	L	G	Own	Fin	FS	Strm	G	Pier	B.B.	D	Eis	.....	B-Li	A	4	Hart	Per	W	Eat	.....	9.25	.....	Ros	36x5	36x10	Jon	Fir	10500	170
Brockway R-4	.....	Cont L4	4½x5½	32.4	L	C	Bus	Fin	F	Strm	V	Phar	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mer	W	Timk	Flot	8.75	46.8	Gem	36x5	36x5†	Smi	.....	6800	164
Chicago C3½	.....	Her MU3	4½x5½	32.4	L	C	Brm	PT	FS	Strm	G	Sim	B-Li	D	Bos	.....	B-Li	A	4	Pet	Math	W	Timk	Flot	9.33	50	Gem	36x5	36x10	Opt	Sta	7200	168
*Clydesdale 90	4100	Cont L	4½x5½	32.4	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	10.33	55.2	Ros	36x5	40x5†	Smi	.....	7000	170
Dart W	.....	Buda YTU	4¼x6	32.4	L	C	Own	C	F	Zen	G	Pier	Full	DD	Eis	.....	Full	A	4	Spic	Per	W	Own	.....	8.7	52.5	Ros	36x5	36x10	Pru	.....	6740	160
Day Elder F	3150	Cont E4	4½x5½	32.4	L	C	Bus	Fin	FS	Zen	G	Mon	B-Li	DD	Eis	.....	B-Li	U	4	Hart	IC	W	Shel	½Fl	10.25	41	Gem	36x5	36x5†	Jon	Fir	5600	165
Dependable G 3½	3550	Buda YTU	4½x6	32.4	L	C	Lng	Fin	F	Zen	V	Mon	Full	DD	Spl	AL	Full	A	4	Acm	Per	W	Wis	½-Fl	10	47.61	Ros	36x6	36x10	Bim	Fir	6000	165
Diamond T-K	3750	Hin	4¼x5½	28.9	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	.....	Covt	A	4	Spic	Math	W	Timk	Flot	8.8	44.36	Gem	36x5	36x5†	.....	.....	7250	170
Dixon	4070	Cont E4	4½x5½	32.4	L	C	GO	PT	FS	Zen	G	Pier	Full	.....	Apo	.....	Full	U	4	Hart	IC	W	Timk	Flot	Opt	Opt	Ros	36x5	36x10	Smi	.....	6650	160
Dorris K7	4400	Own	4¼x5½	28.9	H	C	McC	Fin	F	Strm	G	Own	Own	DP	Bos	W	W-Gr	A	4	Spic	Row	W	Timk	Flot	10.33	51.5	Ros	36x5	36x10	Smi	.....	6750	194
Duplex E	3500	Buda TU	4¼x5½	28.9	H	P	Lng	ZZT	FS	Sheb	V	Dup	B-Li	DD	Eis	.....	B-Li	U	4	Pet	Tut	I	Own	D	8	64	Woh	36x8	36x8	Pru	.....	6075	130
Federal WE	3150	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	.....	WC	A	4	Spic	Math	W	Timk	Flot	10.33	51.56	Gem	36x5	36x5†	Smi	Fir	6990	156
Gary KT	3650	Buda YTU	4½x6	32.4	L	C	Chic	Fin	F	Mas	G	McC	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	10.33	50	Ros	36x5	40x5	Pru	.....	7000	162
Giant 17	4150	Cont E4	4½x5½	32.4	L	P	Own	.....	B	Strm	G	Mon	.....	DD	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	10.25	49.61	Ros	36x5	36x5†	Way	.....	6800	176
G. M. C. K-71A	3600	Own	4½x6	32.4	L	B	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Opt	Own	A	7	Own	Det	W	Timk	Flot	8.75	75.2	Own	36x5	40x5†	Own	.....	7714	163
G.M.C. K-71B	3700	Own	4½x6	32.4	L	B	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Opt	Own	A	7	Own	Det	W	Timk	Flot	8.75	75.2	Own	36x5	40x5	Own	.....	7820	187
G.M.C. K-71T	3700	Own	4½x6	32.4	L	B	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Opt	Own	A	7	Own	Det	W	Timk	Flot	10.33	88.83	Own	36x5	40x12	Own	.....	7987	138
Gramm-Pioneer 75P	4225	Hink HA200	4½x5½	32.4	L	C	Own	Fin	F	Strm	V	Hink	Own	DD	Eis	NE	Own	A	4	Own	Per	W	Shel	½Fl	9.5	45	Ros	36x6*	42x9*	Smi	.....	6000	150
Hal-Fur B	3000	Hin HA-500	4¼x5½	28.9	L	G	GO	PT	F	Strm	V	Hin	B.B.	P	Bos	W	Own	A	4	Pet	Per	W	Timk	Flot	7.75	57.4	Gem	36x6	Opt	Smi	Fir	5000	Op
Hal-Fur F	4000	Hin AA 1600	4½x5½	32.4	H	C	GO	PT	F	Strm	V	Hin	B.B.	DP	Bos	W	Own	A	4	Pet	Mer	W	Timk	Flot	10.33	72	Gem	36x5	40x10	.....	.....	6500	180
Hall 3½ Worm	.....	Cont E4	4½x5½	32.4	L	C	Own	PT	FS	Zen	G	Dup	B-Li	DD	Bos	.....	B-Li	A	4	Opt	Det	W	Timk	Flot	10	.....	Gem	36x5	36x5†	Smi	.....	6525	144
Harvey WHA	3950	Buda YTU	4½x6	32.4	L	C	Own	Fin	F	Strm	G	McC	Full	DD	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	8.75	46.8	Ros	36x5	36x5†	StM	.....	7600	160
Hendrickson M	3000	Buda ETU	4¼x5½	28.9	L	C	Chic	PT	F	Strm	G	McC	Full	DD	Spl	.....	Full	A	4	Ther	Tut	W	Timk	Flot	10	49.6	Ros	36x5	36x5. . .	Stn	.....	.....	Op
*Hurlburt CC	3475	Buda YTU	4¼x5½	28.9	L	C	Own	Fin	FS	Zen	G	Sim	B-Li	D	Eis	.....	B-Li	A	4	Spic	Per	W	Own	Flot	8.7	41.91	Ros	36x5	36x5†	Way	.....	7000	170
Indiana 35	.....	Own 40	4¾x5½	30.6	L	C	McC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	10.2	54.84	Woh	36x5	36x10	Smi	.....	7050	160
Jackson B	3850	Cont E4	4½x5½	32.4	L	G	Lng	Fin	FS	Strm	V	Pier	B.B.	DP	Eis	Dy	Own	A	4	Spic	Per	B	Own	Flot	9.2	43.49	Ros	36x7	36x7	.....	.....	7400	150
Kalamazoo SK	3845	Wis UAU	4¼x6	28.9	L	P	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Full	A	4	B.B.	Shel	W	Shel	½Fl	10.28	61.5	Ros	36x5	36x12	Smi	.....	7520	160
Kelly-Springfield K-40	3900	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B&B	D	Eis	W	Covt	A	3	Own	Per	C	Own	D	10.49	31.69	Gem	36x5	40x5†	StM	.....	7730	Op
*Kelly-Springfield K-41	3900	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Pet	Per	I	Clark	D	10	50.7	Gem	36x6	36x10	Cla	.....	7850	Op
Kelly-Springfield K-42	3900	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Pet	Per	W	Eat	½Fl	10.25	51.97	Gem	36x5	40x5†	Smi	.....	8500	Op
Kleiber C	.....	Cont L4	4½x5½	32.4	L	C	RT	PT	FS	Strm	G	Sim	.....	DD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	Flot	8.75	42.35	Ros	36x5	36x10	Smi	.....	7200	163
Koehler F	4470	Her	4½x5½	32.4	L	G	Own	PT	F	Zen	G	Pier	B-Li	DD	Spl	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	10.33	.....	Lav	36x5	36x10	Day	.....	7000	162
*Larrabee L4	.....	Cont L4	4½x5½	32.4	L	C	R-T	PT	S	Zen	G	Phar	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Mer	W	Shel	½Fl	10.25	55	Ros	36x5	36x10	Smi	.....	7600	186
Mack AC 3½	4950	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	3	Spic	Mer	C	Own	D	8.49	27.20	Own	36x5	40x5†	.....	.....	8070	Op
Master A	3990	Buda YTU	4½x6	32.4	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	Opt	Opt	Ros	36x5	40x5†	Smi	.....	8000	158
Master AL	4090	Buda YTU	4½x6	32.4	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	Opt	Opt	Ros	36x5	40x5†	Smi	.....	8200	194
Master E	4290	Buda YTU	4½x6	32.4	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	Opt	Opt	Ros	36x5	40x5†	Wal	.....	8000	158
Master EL	4390	Buda YTU	4½x6	32.4	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	Opt	Opt	Ros	36x5	40x5†	Wal	.....	8200	194
Menominee G	3800	Wis VAU	4½x6	32.4	L	C	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	A	4	Spic	Tut	W	Timk	Flot	10.3	53.71	Ros	36x5	36x10	Smi	Fir	6750	160
Nelson & LeMoon G 4	.....	Cont L4	4½x5½	32.4	L	C	Chic	Fin	F	Strm	G	Phar	B-Li	DD	Bos	W	B-Li	U	4	Own	Tut	W	Timk	Flot	8.7	42	Ros	36x5	36x5†	Pru	Gdy	6000	Op
Noble E-71	3800	Buda YTU	4½x6	32.4	L	C	Chg	Fin	F	Strm	V	Pier	Full	DP	Eis	W	War	A	4	ME	.....	W	Shel	½Fl	8.75	44	Lav	36x53	6x10	Bim	Fir	7200	182
*Northway B3	4200	Own	4 x6	25.6	H	G	GO	C	F	Strm	V	Pier	Full	DP	Wag	Bj	Full	U	4	Spic	Per	W	Shel	½Fl	10	49.2	Ros	36x5	40x5†	Cla	Fir	7700	Op
*Ogden F 3½	.....	Cont L4	4½x5½	32.4	L	G	Chic	Fin	F	Strm	G	Pier	B-Li	DD	Spl	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	10.33	.....	Ros	36x5	40x10	Stn	.....	7300	178
O.K. 3½ T	3975	Buda YTU	4½x6	32.4	L	G	RT	PT	FS	Zen	V	Pier	Full	DD	Eis	.....	Full	A	4	Hart	Cham	W	Wis	½Fl	10	60	Ros	36x5*	36x5†	Bim	.....	6350	164
Old Reliable C	4250	Wis UAU	4¼x6	28.9	L	C	Chic	PT	F	Strm	V	Mon	Full	DD	Bos	.....	Full	A	4	Pet	Shel	W	Shel	½Fl	8.75	52.5	Ros	36x5	36x5†	StM	.....	6650	168
Oneida D	4050	Hin 200	4½x5½	33.5	L	C	Mod	C	F	Strm	V	Hin	Full	DD	Apo	.....	Full	A	4	Pet	Math	W	Timk	Flot	10.33	49.6	Ros	36x5	36x10	Smi	.....	7700	170
*Paige 51-18	3145	Hin 200	4½x5½	32.4	L	C	Own	Fin	F	Strm	V	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	10.3	50.01	Ros	36x5	36x5†	Own	Fir	7000	160
Parker J20	3950	Wis VAU	4½x6	32.4	L	C	Own	PT	F	Strm	V	Pier	B-Li	DD	Eis	W	W-Gr	A	4	Bld	Tut	W	Own	Flot	8.75	43.6	Ros	36x5	40x5†	Smi	.....	6550	160
Pierce Arrow W2	4350	Own	4½x6¾	32.4	T	C	Own	Fin	F	Strm	F	Own	Own	DD	Del	Opt	Own	A	4	.....	SP	W	Own	Flot	8	49	....	36x5	36x5†	Day	.....	8350	162
Pittsburger D	3800	Own	4½x5¼	27.2	T	C	GO	PT	F	Strm	V	.....	B-Li	DP	Bos	.....	B-Li	U	4	Spic	C	W	Own	.....	9.5	50.82	Ros	36x5	36x10	Smi	.....	6500	162
*Power C	4150	Hink HA200	4½x5½	32.4	L	C	GO	PT	F	Zen	G	Hin	Full	DD	Eis	W	Full	A	4	Arv	Row	W	Wis	½Fl	10	48	Ros	36x5	40x10	StM	.....	7400	160
Rainier R-18	4400	Cont L4	4½x5½	32.4	L	G	EM	PT	FS	Zen	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	SP	W	Tim	Flot	.....		Ros	36x5	46x5†		Fir	.....	170
Republic 20	3095	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Strm	G	Phar	Full	DD	Bos	.....	Full	U	4	Spic	Math	I	Torb	D	10.25	49.25	Jac	36x5	36x10	Smi	Fir	6517	165
*Sanford W35	.....	Cont E4	4½x5½	32.4	L	G	McC	Fin	F	Strm	G	Pier	B.B	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	8.7	34.8	Ros	36x5	36x5†	Hoo	Fir	6750	174
Selden Unit 70	3750	Cont E7	4½x5½	32.4	L	C	Lng	Fin	FS	Strm	G	Pier	B-Li	D	Eis	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	8.75	42.35	Gem	36x5	36x10	Stn	.....	7200	162
Selden Unit 51	4350	Cont E4	4½x5½	32.4	L	C	Lng	Fin	FS	Strm	G	Pier	B-Li	D	Eis	W	B-Li	A	4	Spic	Per	W	Timk	Flot	6	32	Gem	36x6	40x8	Stn	Opt	5650	179
Service 72	.....	Buda HU	4¼x5½	28.9	L	C	McC	Fin	F	Strm	V	.....	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	8.75	42.35	Ros	36x5	36x5†	Stn	.....	6930	171
Service 77	.....	Buda YU	4½x6	32.4	L	C	Lng	Fin	F	Strm	V	.....	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	7.8	37.75	Ros	36x5	36x5†	Stn	.....	7280	171

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
5 Ton—Con'd		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23		
Master F	5090	Buda ATU	4¼x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	Opt	Opt	Ros	36x6	40x6†	Wal	.....	9200	170
Master FL	5190	Buda ATU	4¼x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	....	B-Li	A	4	Spic	Det	R	Walk	Flot	Opt	Opt	Ros	36x6	40x6†	Wal	.....	9800	194
Menominee J	4850	Wis RAU	4¾x6	36.1	L	C	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	A	4	Spic	Tut	W	Timk	Flot	11.6	61.43	Ros	36x6	40x12	Smi	Fir	8250	160
Nelson & LeMoon G5	.....	Cont B2	4¾x6	36.1	L	C	Chic	Fin	F	Strm	G	Con	B-Li	DD	Spl	.....	B-Li	A	4	M-E	Tut	W	Walk	.....	10.33	.....	Ros	36x6	40x12	Wal	.....	8600	175
*Ogden G 5	.....	Cont B 2	4¾x6	36.1	L	C	Chic	Fin	F	Strm	V	Mon	Own	WD	Bos	.....	B-Li	A	4	Pet	Shel	W	Shel	½ Fl	10.25	54.8	Ros	36x6	40x6	StM	.....	8400	180
Old Reliable D	5000	Wis RAU	4¾x6	36.1	L	C	Chic	PT	F	Strm	V	Mon	Own	WD	Bos	.....	B-Li	A	4	Pet	Math	W	Timk	Flot	11.66	70	Ros	36x6	40x12	Smi	.....	9400	180
Oneida E	4725	Hin 1600	4½x5½	33.5	H	C	Mod	C	F	Strm	V	Hin	Full	DD	Apo	.....	Full	A	4	Spic	.....	W	Own	Flot	10.66	49	Ros	36x6	40x6	.....	.....	9050	156
Packard EF	4500	Own	5 x5½	40	L	C	.....	Fin	F	Own	P	Own	Own	DP	Spl	Bj	Own	A	4	Spic	.....	W	Own	Flot	10.66	49	Ros	36x6	40x6†	Smi	.....	8400	160
Parker M20	4850	Wis RBU	5 x6	40	L	C	Own	PT	F	Strm	V	Sim	B-Li	DD	Eis	W	W-Gr	A	4	Bld	Tut	W	Own	Flot	10.25	51.1	Ros	36x6	40x6†	Day	.....	9300	168
Pierce Arrow R10	4850	Own	4½x6¾	32.4	T	C	Own	Fin	F	Strm	F	Own	Own	DD	Del	Opt	Own	A	4	.....	SP	W	Own	Flot	10	61.2	.....	36x5	40x6†	Day	.....	9300	168
Rainier R-17	5100	Cont B-2	4¾x6	36.1	L	G	EM	Fin	F	Zen	V	Pier	B-Li	DP	....	.....	B-Li	A	4	Spi	SP	W	Timk	Flot	.....	.....	Ros	36x6	36x36†	Smi	.....	8000	170
*Rowe FW 5	4850	Wis VAU	4½x6	36.1	L	C	Fed	H	F	Zen	G	Sim	B-Li	DP	Bos	.....	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	10.25	40.7	Ros	36x6	40x6†	Hoo	.....	8300	169
*Rowe FW 5	.....	Buda YU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	B-Li	DP	Bos	.....	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	10.75	52.03	Ros	36x5	40x6†	Hoo	Fir	9070	174
*Sanford W50	.....	Cont E4	4½x5½	32.4	L	G	McC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	.....	Own	A	4	M-E	Nat	W	Own	Flot	14	66.5	Own	36x5	40x6†	StM	.....	8200	168
Schacht	4400	Buda YTU	4½x6	32.4	L	G	Own	PT	F	Sheb	G	Dup	B.B.	D	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	10.25	61.5	Ros	36x6	40x12	Smi	Fir	8285	156
Schwarts M8	4900	Buda YTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	10.25	61.5	Ros	36x6	40x12	Smi	Fir	8365	170
Schwarts M	4900	BudaYTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	10.25	61.5	Ros	36x6	40x12	Smi	Fir	8460	186
Schwarts ML	4900	Buda YTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	10.25	61.5	Ros	36x6	40x12	Stn	Opt	9650	164
Selden Unit 90	4950	Cont B2	4¾x6	36.1	L	C	Lng	Fin	F	Strm	G	Con	Det	D	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	10.25	55	Gem	36x6	40x12	Stn	.....	8760	171
Service 102	.....	Buda YU	4½x6	32.4	L	C	Lng	Fin	F	Strm	V	.....	.....	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	.....	.....	Ros	36x6	40x6†	Stn	.....	9510	180
*Signal R	3900	Cont B2	4¾x6	36.1	L	C	McC	Fin	FS	Strm	G	Con	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	11.6	56.43	Ros	36x6	40x12	Smi	Gdy	8700	164
Standard 5K	4400	Cont B2	4¼x6	36.1	L	C	Lng	Fin	F	Strm	V	Con	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	11.66	56.5	Gem	36x6	40x14	Day	.....	8700	164
Sterling 5-Worm	4950	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	3	Spic	Math	W	Timk	Flot	8.8	39.69	Ros	36x6	40x6†	Pru	.....	9450	168
Sterling 5-Chain	5500	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	6	UM	Math	C	Own	D	7.04	43	Ros	36x6	40x6†	Smi	.....	9950	174
Super Truck 100	4600	Wis	4¾x6	36.1	L	C	Chic	Fin	F	Zen	G	Sim	Full	DD	Spl	.....	Full	A	4	Spic	Shel	W	Shel	½ Fl	10.25	49.2	Ros	36x5	40x6†	Smi	.....	8500	164
Tiffin TW	4300	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Sheb	G	Con	B.B.	DP	Bos	W	Cott	A	4	Pet	Kal	W	Shel	½ Fl	10.25	53.3	Ros	36x6	40x6†	Smi	.....	8550	168
Titan 5	.....	Buda YTU	4½x6	32.4	L	C	B&W	PT	F	Strm	G	Sim	B.B	D	Eis	.....	Cott	A	4	Pet	Shel	I	Clark	D	11	59	Lav	36x5	40x12	Cla	.....	7900	156
Titan 6	5250	Buda YTU	4½x6	32.4	L	C	BW	ZZT	F	Strm	G	Eis	B.B.	DD	Eis	.....	Cott	A	4	Pet	Shel	I	Clark	D	11	59	Lav	36x5	40x6†	Cla	.....	9100	156
Transport 75	3485	Buda YTU	4½x6	32.5	L	C	.....	.....	F	Strm	G	Dup	B.B.	.....	Eis	.....	Cott	A	4	Hart	Det	I	Clark	.....	10.1	52.1	Jac	36x5	36x12	.....	.....	7600	170
Traylor F	4700	Buda YTU	4½x6	32.6	L	P	GO	Fin	F	Zen	G	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Mer	W	Shel	½ Fl	10.2	.....	Ros	36x6	40x6†	Smi	.....	9000	170
Ultimate D	5500	Buda BTU	5 x6½	40	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	8.79	46.8	Ros	36x6	40x14	Smi	.....	8600	180
United V 5	5000	Buda YTU	4½x6	32.4	L	C	Mod	H	F	Strm	G	Sim	Full	DD	Eis	Opt	Full	A	4	Spic	Shel	I	Shel	D	12.5	75.36	Ros	36x5	40x6†	Cla	.....	9150	160
U. S., T	.....	Buda ATU	4¾x6½	36.1	L	C	Lng	Fin	F	Strm	V	Sim	B-Li	DD	Eis	Opt	B-Li	A	4	Opt	Shel	W	Shel	½ Fl	10.25	54.8	Lav	36x6	40x6†	Smi	.....	9700	172
Walter S	4850	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	DP	Bos	W	W-Gr	A	4	Own	Stan	R	Own	Flot	10	45	Ros	36x6	40x6†	Day	.....	8200	168
Ward La France 5A	4590	.....	5 x6¼	40	L	C	Own	Fin	F	Strm	G	....	B-Li	DP	Bos	.....	B-Li	A	4	M-E	Mer	W	Timk	Flot	8.8	47.08	Ros	36x6	40x6†	Smi	.....	9300	164
White 45	4500	Own	4¼x5½	28.9	L	C	.....	Fin	F	Own	V	Own	Own	D	.....	.....	Own	U	4	Own	.....	R	Own	Flot	.....	.....	Own	36x6	40x6†	.....	.....	8100	174
Wilcox F	.....	Buda	4¾x6½	36.1	L	C	.....	PT	S	Strm	V	Dup	Own	C	Bos	.....	Own	A	4	Spic	Shel	R	Walk	½ Fl	10.25	56.58	Own	36.5	40x12	Smi	.....	9000	162
Wilson H	4520	Own	4¾x6	36.1	L	G	Lng	PT	FS	Mar	V	Pier	B.B.	D	Eis	.....	Own	A	4	K-B	Per	W	Timk	Flot	10.25	49.6	Ros	36x6	36x6†	Smi	.....	7500	160
Winther 109	.....	Wis VAU	4½x6	32.4	L	G	Brm	PT	F	Mas	V	Dup	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Clark	D	12	60.5	Ros	36x5	40x6†	Cla	.....	8300	162
Wisconsin E	3500	Wau DU	4½x6¼	32.4	L	C	Chic	PT	F	Strm	V	Wau	B-Li	DD	Eis	Opt	B-Li	A	3	Spic	Det	W	Timk	Flot	9.25	.....	Lav	35x5	36x10	.....	Gdy	7000	148
Wolverine L 5	3690	Cont L	4½x5½	32.4	L	G	Lng	Fin	F	Strm	G	Phar	Full	DD	Spl	AL	Full	U	4	Up	Am	I	Clark	D	10	48	Ros	36x6*	36x10	Cla	Gdy	7300	186
5½, 6 and 7 Ton																																	
Garford 150 A-7½	5200	Buda BTU	5 x6½	40	L	C	Own	Fin	F	Strm	G	Sim	.....	DD	Spl	.....	Own	J	4	Spic	Per	C	Own	D	11.44	.....	Ros	36x6	40x7†	.....	.....	10200	162
Hall 7 Chain	.....	Cont E4	4½x5½	32.4	L	T	Own	Fin	FS	Zen	G	Dup	B-Li	DP	Bos	.....	B-Li	U	..	Opt	Det	C	.....	D	12	.....	Gem	36x5	40x6†	Smi	.....	8100	144
Hurlburt E-E	4850	Buda	4¾x6½	36.1	L	C	.....	Fin	.....	.....	.....	Sim	.....	DD	Eis	.....	.....	A	4	.....	.....	W	.....	Flot	8	.....	.....	36x6	40x6	.....	.....	13000	Op
*Kelly-Springfield K60	4600	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Own	Per	C	Own	D	12.41	50.26	Gem	36x6	40x7†	Smi	.....	9000	Op
*Kelly-Springfield K61	4800	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Pet	Per	I	Clark	D	11.6	61.8	Gem	36x6	36x7†	Cla	.....	9025	Op
MacDonald A	5750	Buda YTU	4½x6	32.4	L	C	Own	PT	F	Strm	G	Sim	B-Li	DD	Spl	.....	B-Li	U	4	Own	Own	I	Own	D	17.5	77	Own	40x7	Opt	Opt	.....	6000	...
Mack AC6½	5750	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	3	Spic	Mer	C	Own	D	10.50	33.70	Own	36x6	40x12	.....	.....	8672	Op
Mack AC7½	6000	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	3	Spic	Mer	C	Own	D	11.58	37.16	Own	36x7	40x7†	.....	.....	9050	Op
Old Reliable L	6000	Wau EU	5 x6¼	40	L	C	Chic	PT	S	Strm	G	Wau	Own	WD	Bos	.....	Own	J	4	Pet	Math	C	Own	D	10.86	54.9	Ros	36x6	40x7†	StM	.....	10240	136
Schacht 7	5050	Buda YTU	4½x6	32.4	L	G	Own	PT	F	Sheb	G	Dup	B.B.	D	Bos	.....	Own	A	4	M-E	Nat	W	Own	Flot	14	66.5	Own	36x6	40x7†	St M	.....	8500	168
Sterling 7½-Chain	6000	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	6	UM	Math	C	Own	D	7.26	44	Ros	36x6	40x7†	Smi	.....	10700	174
Tiffin 6 U-W	4500	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Sheb	G	Con	B.B.	DP	Bos	W	Cott	A	4	Pet	Kal	W	Shel	½ Fl	10.25	53.3	Ros	36x6	40x12	Smi	.....	9200	168
Union J.W	5800	Wis RBU	5 x6	40	L	G	GO	Fin	F	Sheb	G	Dup	Full	DD	Eis	LN	Full	A	4	UP	Math	R	Walk	.....	11.5	69.0	Ros	36x6	40x14	Smi	.....	9250	193
Walter R	5350	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	War	A	4	Own	.....	.....	Own	Flot	10	50	Ros	36x6	40x7†	Day	.....	8500	168
Wichita 8	5000	Wau DU	4½x6¼	32.4	L	G	.....	PT	F	Strm	G	Wau	Own	C	Wag	.....	Own	A	4	Own	Det	R	Own	½ Fl	14	66.3	Ros	36x6	40x6†	Smi	.....	10000	165
Winther 140	.....	Wis-RBU	5 x6	40	L	G	Brm	PT	F	Mas	V	Dup	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Clark	D	12	60.5	Ros	36x6	40x7†	Cla	.....	9600	162
Gasoline Tractor-Trucks																																	
Buffalo Six 2½	3400	Her CU3	4 x5½	25.6	L	P	Own	PT	F	Zen	V	Sim	Covt	D	Bos	Bos	Covt	...	10	Spic	Shel	W	Shel	½ Fl	8.75	170	Ros	Opt	Opt	Way	Gdy	6200	155
Federal Light Duty	2600	Cont C4	4½x5¼	27.2	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	.....	Det	A	4	Spic	Math	W	Timk	Flot	9.2	40.7	Gem	36x4	36x7	.....	Fir	4700	120
Federal Heavy Duty	3350	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	.....	WC	A	4	Spic	Math	W	Timk	Flot	12	59.8	Gem	36x5	36x5†	.....	Fir	6800	114
Fulton D	2550	H Sp 7000	3½x5	19.6	L	T	GO	H	FS	Cart	G	.....	Covt	DP	Ber	.....	Covt	...	3	UP	.....	I	Russ	D	10.2	.....	Lav	36x4	36x6	Hoo	.....	3300	110
Koehler MT	3275	Her	4 x5½	25.6	L	G	Own	PT	F	Zen	G	Sim	B-Li	DD	Spl	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	9.25	37	Lav	36x4	36x7	Way	.....	5000	129
Lombard 140 H.P	.....	Spec 6	5¾x7	72.7	L	C	Spec	H	F	Strm	P	.....	.....	D	.....	.....	Spec	A	..	.....	.....	W	.....	.....	.....	.....	Spe	.....	.....	.....	.....	18000	...
Lombard 50 H.P	.....	Spec 4	5 x6½	40	L	C	Spec	H	F	Strm	P	.....	.....	D	.....	.....	Spic	A	..	.....	.....	W	.....	.....	.....	.....	Spe	.....	.....	.....	.....	8000	...
*Mack AB 5-Ton	3400	Own AB	4 x5	25.6	L	C	Own	C	S	Zen	G	Own	Own	DD	Spl	.....	Own	UJ	4	Spic	Mer	C	Own	D	10.5	42.27	Own	36x4	36x4†	.....	.....	4940	120
Mack AC 7-Ton	4950	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	4	Spic	Mer	C	Own	D	9.69	62.20	Own	36x5	40x5†	.....	.....	7670	120
Mack AC 10-Ton	5500	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	4	Spic	Mer	C	Own	D	10.5	67.38	Own	36x6	40x6†	.....	.....	8250	120
Mack AC 13-Ton	5750	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	4	Spic	Mer	C	Own	D	11.58	74.29	Own	36x6	40x12	.....	.....	8272	120
Mack AC 15-Ton	6000	Own AC	5 x6	40	L	C	Own	Fin	S	Zen	G	Own	Own	DP	Spl	.....	Own	UJ	4	Spic	Mer	C	Own	D	12.92	82.92	Own	36x7	40x7†	.....	.....	8650	120
MasterDDT	3390	Buda HU	4¼x5½	28.9	L	C	Chic	PT	FS	Mas	V	McC	Full	DP	Eis	.....	Full	U	4	Spic	Det	R	Walk	Flot	Opt	Opt	Ros	34x4	36x7	Wal	.....	4500	130
Walter ST	4850	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	V	Wau	B-Li	D	Eis	W	War	A	4	Own	.....	.....	Own	Flot	10	50	Ros	36x6	40x6†	Day	.....	7900	126
Watson	4050	Cont E4	4½x5½	32.4	L	P	Jam	C	FS	Strm	G	Pier	B-Li	DP	Sim	.....	B-Li	U	4	Spic	Shel	W	Timk	Flot	8.75	42.35	Gem	34x4	36x5†	M&C	.....	6500	80

ELECTRIC COMMERCIAL CARS

E. C. M. Name and Model Number	Carrying Capacity	Chassis Weight	Chassis Price	Maximum Speed	Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Atlantic 1C	2000	2770	.....	12	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x4	Ross	193	65
Atlantic 2C	4000	3590	.....	11	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x3†	Ross	115	65
Atlantic 3C	7000	5220	.....	10	Opt	.....	G-E	G-E	5	C	Timk	.....	36x5	40x5†	Ross	135	65
Atlantic 5C	10000	6230	.....	9	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x5†	Ross	144	65
Atlantic 6C	13000	6940	.....	8	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x6	Ross	156	65
C-T D-1	1000	2200	1585	14	Opt	55	G-E	Own	4	C-T	Flot	Shel	36x3	36x3½	W	100	60
C-T B-1.5	1500	2300	1985	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3	36x4	W	91½	65
C-T D-1.5	1500	2300	1985	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3	36x4	W	116	71
C-T B-2	2000	2400	2150	14	Opt	50	G-E	Own	4	C-T	Flot	Shel	36x3½	36x5	W	101	66
C-T D-2	2000	2400	2150	14	Opt	50	G-E	Own	4	C-T	Flot	Shel	36x3½	36x5	W	124	70
C-T B-4	4000	4000	2575	12	Opt	50	G-E	Own	4	C-T	Flot	Shel	36x4	36x4†	W	116	68
C-T C-6	6000	4200	2575	8	Opt	35	G-E	Own	4	I	Dead	Shel	36x4	36x4†	W	116	70
C-T C-7	7000	5000	3550	10	Opt	45	G-E	Own	4	I	Dead	Shel	36x5	36x5†	W	126	65
C-T A-7	7000	5800	3850	11	Opt	45	G-E	Own	4	I	Dead	Shel	36x6	36x4†	W	122	60
C-T A-10	10000	6500	3960	10	Opt	45	G-E	Own	4	I	Dead	Shel	36x7	36x5†	W	132	59
*Kelland A	1000	1850	1400	15	Opt	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3	Ross	102	60
*Kelland B	1500	1950	1450	15	Opt	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60
*Kelland C	2000	2150	1500	15	Opt	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	102	60
Lansden BG ¾	.....	1400	1600	15	Opt	50	G-E	G-E	4	R	Flot	SP	32x4½	32x4½	Lav	108	50
Lansden MC 1	.....	2900	1850	12	Opt	50	G-E	G-E	4	C	D	SP	36x3	36x3½	KH	108	60
Lansden MD 2	.....	4400	2250	11	Opt	50	G-E	G-E	4	C	D	SP	36x4	36x3†	KH	120	60
Lansden ME 3½	.....	5700	2950	10	Opt	45	G-E	G-E	4	C	D	SP	36x5	36x4†	KH	133	60
Lansden MF 5	.....	7500	3350	9	Opt	40	G-E	G-E	4	C	D	SP	36x6	36x5†	KH	146	60
Lansden MG 6	.....	8900	.....	7	Opt	35	G-E	G-E	4	C	D	SP	36x7	36x6†	KH	156	60
Milburn Model 40	2000	1990	1985	15	Opt	50	G-E	Own	4	.....	W	Math	32x4½	33x5	Gem	128	62
Milburn Model 43	1000	1690	1585	18	Opt	50	G-E	Own	4	.....	W	Math	32x4½	32x4½	Gem	115	56
*Walker Model 22	2000	2500	.....	14	Opt	60	West	West	5	O	Own	Math	34x3½	36x4	Ross	101	66
*Walker Model 42	4000	3700	.....	13	Opt	60	West	West	5	O	Own	Math	36x4	36x6	Ross	114	66
Walker M 2	1250	2300	.....	15	Opt	60	West	West	5	O	Own	Math	34x3	36x3½	Ross	94	66
Walker N	10000	6300	.....	10	Opt	50	West	West	5	O	Own	Math	36x6	38x6†	Ross	141	66
Walker P	7000	5300	.....	11	Opt	50	West	West	5	O	Own	Math	36x5	38x5†	Ross	131	66
Walter EN	4000	4400	2900	15	Opt	50	G-E	G-E	4	O	Dead	.....	36x4	36x7	Gem	114	60
Walter EL	7000	4550	3600	13½	Opt	50	G-E	G-E	4	O	Dead	.....	36x5	36x4	Gem	130	60
Walter ES	10000	7200	4350	12	Opt	50	G-E	G-E	4	O	Dead	.....	36x6	40x6	Ros	150	60
Ward WS 2	.....	1650	.....	13	Opt	45	G-E	Own	4	W	Shel	Shel	32x3	32x3½	Own	88	60
Ward WA	.....	2860	.....	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3½	34x4	Own	90	60
Ward WA 2	.....	2470	.....	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3½	34x4	Own	90	60
Ward WB	.....	3850	.....	10.5	Opt	40	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	60
Ward WB 2	.....	3350	.....	10.5	Opt	40	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	60
Ward WD	.....	4875	.....	9	Opt	35	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	60
Ward WD 2	.....	4350	.....	9	Opt	35	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	60
Ward WF	.....	7200	.....	8	Opt	30	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WF 2	.....	6450	.....	8	Opt	30	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WH	.....	9400	.....	7	Opt	26	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	144	70
Ward WH 2	.....	8200	.....	7	Opt	26	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	144	70

Manufacturers and Models Included in Specifications on Preceding Pages

Acason—¼, 1, 1½, 2½, 3½, 5—Acason Motor Truck Co., Wyandotte, Mich.
Ace—1½, 2½—American Motor Truck Co., Newark, Ohio.
Acme—1, 1½, 2 3, 4½, 6¼—Acme Motor Truck Co., Cadillac Mich.
American—2½, 4—American Motor Truck & Tractor Co., Portland, Conn.
Apex—1, 1½, 2½, 3½—Hamilton Motor Co., Grand Haven, Mich.
Armleder—1, 1½, 2½, 3½—O. Armleder Co., Cincinnati, Ohio.
Atco—1½, 2½—American Truck & Trailer Corp., Kankakee, Ill.
Atlantic—1, 2, 3, 5, 6—Atlantic Electric Vehicle Co., Newark, N. J.
Atlas—1, 1½—Atlas Truck Corp., York, Pa.
Atterbury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
Autocar—1½, 2, 3½, 5—Autocar Co., Ardmore, Pa.
Available—1½, 2, 2½, 3½, 5—Available Truck Co., Chicago, Ill.
Avery—1—Avery Company, Peoria, Ill.
Bell—1, 1½, 2½—Iowa Motor Truck Co., Ottumwa, Ia.
Belmont—1, 1½, 2, 3—Belmont Motors Corp., Harrisburg, Pa.
Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
Bethlehem—1, 2, 3—Bethlehem Motors Corp., Allentown, Pa.
Birch—1—Birch Motor Cars, Chicago, Ill.
Bridgeport—1½, 2½, 3½—Bridgeport Motor Truck Co., Bridgeport, Conn.
Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
Brockway—¾, 1½ 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.
Buffalo—1½, 2½T T—Buffalo Truck & Tractor Corp., Clarence, N. Y.
C. T.—1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
Capitol—1½, 2½, 3½—Capitol Motors Corp., Fall River, Mass.
Casco—1—Casco Motors, Inc., Portland, Maine.
Case—2—J. I. Case Plow Works Co., Racine, Wis.
Chevrolet—¾, 1—Chevrolet Motor Co. of Mich., Flint, Mich.
Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
Climber—1½—Climber Motor Corp., Little Rock, Ark.
Clydesdale—¾, 1, 1½, 2½, 3½, 5—Clydesdale Motor Truck Co., Clyde, Ohio.
Collier—1, 1½, 2, 2½—Collier Motor Truck Co., Bellevue, Ohio.
Commerce—¾, 1¼, 1½, 2, 2½—Commerce Motor Truck Co., Detroit, Mich.
Concord—1½, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
Corbitt—1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
Cyclone—1½—The Cyclone Motor Corp., Greenville, S. C.
Dart—1½, 2½, 3½—Dart Truck & Tractor Corp., Waterloo, Ia.
Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
Dearborn—1, 1½, 2—Dearborn Truck Co., Chicago, Ill.
Defiance—1, 1½, 2—Defiance Motor Truck Co., Defiance, Ohio.
Denby—1, 1½, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.
Dependable—1, 1½, 2, 2½, 3½—Dependable Truck & Tractor Co., East St. Louis, Ill.
Diamond T—1¼, 1½, 2, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
Dixon—Dixon Motor Truck Co., Altoona, Pa.
Dodge—½—Dodge Bros., Detroit, Mich.
D-Olt—1½, 2½, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
Dorris—2, 3½—Dorris Motor Car Co. St. Louis, Mo.
Dort—½—Dort Motor Car Co., Flint, Mich.
Double Drive—4—Double Drive Truck Co., Chicago, Ill.
Douglas—1½, 2, 3—Douglas Motors Corp., Omaha, Neb.
Drake—2—Drake Motor & Tire Mfg. Corp., Knoxville, Tenn.
Duplex—2, 3½—Duplex Truck Co., Lansing, Mich.
Eagle—2—Eagle Motor Truck Corp., St. Louis, Mo.
Erie—1½, 2½—Erie Motor Truck Mfg. Co., Erie, Pa.
Eugol-1—Eugol Motor Truck Co., Kenosha Wis.
F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
Facto—2½—Facto Motor Trucks, Springfield, Mass.
Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
Fargo—2—Fargo Motor Truck Co., Chicago, Ill.
Federal—¾, 1, 1½,2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Ford—1—Ford Motor Co., Highland Park, Mich.
Forschler—1, 1½, 2, 3—Forschler Motor Truck Mfg. Co., New Orleans, La.
Front Drive—1½—Double Drive Truck Co., Chicago, Ill.
Fulton—1, 2, T.T.—Fulton Motors Corp., Farmingdale, N. Y.
G. M. C.—1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
G. W. W.—1½—Wilson Truck Mfg. Co., Henderson, Ia.
Garford—¾, 1¼, 2, 3½ 5, 7½—Garford Motor Truck Co., Lima, O.
Gary—1, 2, 2½, 3½, 5—Gary Motor Corp., Gary, Ind.
Gersix—1½, 2½, 3—Gersix Mfg. Co., Seattle, Wash.
Giant—1½, 2½, 3½, 5—Giant Truck Corp., Chicago Heights, Ill.
Graham—1, 1½—Graham Brothers, Evansville, Ind.
Gramm-Bernstein—1, 1½, 2, 3, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Hal-Fur—2, 3½—Hal-Fur Motor Truck Co., Cleveland, Ohio.
Hall—2½, 3½, 5, 7—Lewis-Hall Motors Corp., Detroit, Mich.
Harvey—2, 2½, 3½—Harvey Motor Truck Co., Harvey, Ill.
Hendrickson—2½, 3½, 5—Hendrickson Motor Truck Co., Chicago, Ill.
Higrade—1, 1½—Higrade Motors Co., Harbor Springs, Mich.
Highway Special—1—United Motor Truck Corp., Grand Rapids, Mich.
H. R. L.—¾, 1½, 2½—H. R. L. Motor Co., Seattle, Wash.
Hug—1½—The Hug Co., Highland, Ill.
Hurlburt—1½, 2½, 3½, 5, 7—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Huron—1½, 2½—Huron Truck Co., Bad Axe, Mich.
Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
Indiana—1, 1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
International—1, 1½, 2, 3, 5—International Harvester Co., Chicago, Ill.
Jackson—3½—Jackson Motors Corp., Jackson, Mich.
Kalamazoo—1½, 2½, 3½—Kalamazoo Motor Corp., Kalamazoo, Mich.

Kearns—¾, 1½—Kearns-Dughie Motors Co., Danville, Pa.
Kelland—Kelland Motor Car Co., Newark, N. J.
Kelly-Springfield—1½, 2½, 3½, 5, 6—Kelly-Springfield Motor Truck Co., Springfield, O.
Keystone—2—Keystone Motor Truck Corp., Philadelphia, Pa.
Kimball—2, 2½, 3, 4, 5—Kimball Motor Truck Co., Los Angeles, Cal.
Kissel—1, 1½, 2½, 4, 5—Kissel Motor Car Co., Hartford, Wis.
Kleiber—1, 1½, 2, 2½, 3½, 5—Kleiber & Co., Inc., San Francisco, Cal.
Koehler—1½, 2½, 3½, T.T.—H. J. Koehler Motors Corp., Bloomfield, N. J.
Lange—2, 2½—Lange Motor Truck Co., Pittsburgh, Pa.
Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
Larrabee-Deyo—1½, 2½, 3½, 5—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.
Luedinghaus—1, 1½, 2—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
Maccar—1½, 2, 3, 4, 5—Maccar Truck Co., Scranton, Pa.
MacDonald—7—MacDonald Truck & Tractor Co., San Francisco, Cal.
Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—International Motor Co., New York, N. Y.
Master—1½, 2½, 3½, 5, T.T.—Master Trucks, Inc., Chicago, Ill.
Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
Menominee—1, 1½, 2, 3½, 5—Menominee Motor Truck Co., Menominee, Mich.
Moline—1½—Moline Plow Co., Moline, Ill.
Moreland—1, 1½, 2½, 4, 5—Moreland Motor Truck Co., Los Angeles, Cal.
Napoleon—¾, 1, 1½—Napoleon Motors Co., Traverse City, Mich.
Nash—1, 2—Nash Motors Co., Kenosha, Wis.
Nelson-LeMoon—1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
Netco—2, 2½—New England Truck Co., Fitchburg, Mass.
Niles—2—South Main Motor Co., Pittsburgh, Pa.
Noble—1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
Northway—2, 3½—Northway Motors Co., Natick, Mass.
Norwalk—1, 1½—Norwalk Motor Car Co., Martinburg, W. Va.
O. K.—1½, 2½, 3½—Oklahoma Auto Mfg. Co., North Muskogee, Okla.
Ogden—¾, 1½, 2½, 3½, 5—Ogden Motor Truck Co., Chicago, Ill.
Old Reliable—1½, 2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
Oldsmobile—1—Olds Motor Works, Lansing, Mich.
Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
Oneida—2, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.
Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Packard—2, 3, 5—Packard Motor Car Co., Detroit, Mich.
Paige—1½, 2½, 3½—Paige-Detroit Motor Car Co., Detroit, Mich.
Parker—1, 2½, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Patriot—1, 2, 3—Patriot Mfg. Co., Lincoln, Neb.
Penn—1, 2—Penn Motors Corp., 1714 N. Broad St., Philadelphia, Pa.
Pierce-Arrow—2, 3½, 5—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
Pioneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburger—2½, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—1½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
Premocar—1½—Preston Motors Corp., Birmingham, Ala.
Rainier—¾, 1, 1½, 2, 2½, 3½, 5—Rainier Motor Corp., New York N. Y.
Ranger—2—Southern Motor Mfg. Ass'n, Ltd., Houston, Tex.
Reliance—1½, 2½—Reliance Motor Truck Co., Appleton, Wis.
Reo—1¼—Reo Motor Car Co., Lansing, Mich.
Republic—¾, 1, 1½, 2½, 3½—Republic Motor Truck Co., Inc., Alma, Mich.
Rowe—1½, 2, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
Ruggles—1½, 2—Ruggles Motor Truck Co., Saginaw, Mich.
Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
Samson—¾, 1¼—Samson Tractor Co., Janesville, Wis.
Sanford—2, 3½, 5—Sanford Motor Truck Co., Syracuse, N. Y.
Schacht—2, 3, 4, 5, 7—G. A. Schacht Motor Truck Co., Cincinnati, O.
Schwartz—1, 2, 3, 5—Schwartz Motor Truck Co., Reading, Pa.
Selden—1½, 2½, 3½, 5—Selden Truck Corp., Rochester, N. Y.
Service—¾, 1¼, 1½, 2, 2½, 3, 3½, 6—Service Motor Truck Co., Wabash, Ind.
Signal—1, 1½, 2½, 3½, 5—Signal Truck Corp., Detroit, Mich.
Southern—1, 1½, 2—Southern Truck & Car Corp., Greenboro, N. C.
Standard—¾, 1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
Stewart—¾, 1, 1½, 2, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
Stoughton—¾, 1, 1½, 2, 3—Stoughton Wagon Co., Stoughton, Wis.
Super Truck—2½, 3½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
Superior—1, 2—Superior Motor Truck Co., Atlanta, Ga.
Tiffin—1½, 2½, 3½, 5, 6—Tiffin Wagon Co., Tiffin, Ohio.
Titan—2, 3½, 5, 6—Titan Truck Co., Milwaukee, Wis.
Thomart Speed—1¼—Thomart Motor Co., Kent, Ohio.
Tower—1½, 2½, 3½—Tower Motor Truck Co., Greenville, Mich.
Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
Transport—1, 1½, 2, 3, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
Triangle—¾, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
Triumph—1½, 2, 2½—Triumph Truck & Tractor Co., Kansas City, Mo.
Twin City—2, 3½—Twin City Company, Minneapolis, Minn.
Ultimate—1½, 2, 2½, 3, 5—Vreeland Motor Co., Inc., Newark, N. J.
Union—2½, 4, 6—Union Motor Truck Co., Bay City, Mich.
United—1½, 2½, 3½, 5—United Motors Co., Grand Rapids, Mich.
Ursus—1, 1½, 2½, 3½—Ursus Motor Co., Inc., Chicago, Ill.
U. S.—1¼, 1½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
Velie—1½—Velie Motors Corp., Moline, Ill.
Vim—½, 1, 2, 3—Vim Motor Truck Co., Philadelphia, Pa.
Vulcan—2½—Vulcan Mfg. Co., Seattle, Wash.
Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
Walker-Johnson—2, 2½—Walker-Johnson Truck Co., Woburn, Mass.
Walter—2, 2½, 3½, 5, 7—T. T. Walter Truck Co., New York, N. Y.
Walter—Fink Dumont White, Inc., New York, N. Y.
Ward—¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Ward La France—2½, 3½, 5—Ward La France Truck Co., Inc., Elmira, N. Y.
Watson—¾, 3½, T.T.—Watson Wagon Co., Canastota, N. Y.
White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
White Hickory—1, 1½, 2½—White Hickory Motor Corp., Atlanta, Ga.
Wichita—1, 2, 3, 3½, 5½—Wichita Falls Motors Co., Wichita Falls, Tex.
Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
Wilson—1½, 2½, 3½, 5—J. C. Wilson Co., Detroit, Mich.
Winther—1, 1½, 2, 2½, 3½, 5, 7—Winther Moter Truck Co., Kenosha, Wis.
Wisconsin (Loganville)—2, 2½—Wisconsin Truck Co., Loganville, Wis.
Wisconsin (Sauk City)—1, 1½, 2½, 3½—Wisconsin Farm Tractor Co., Sauk City, Wis.
Witt-Will—1½, 2—Witt-Will Co., Inc., Washington, D. C.
Wolverine—1, 1½, 2, 2½, 3½—American Commercial Car Co., Detroit, Mich.
Yellow Cab—¾, 1¼—Yellow Cab Mfg. Co., Chicago, Ill.

Engine vs. Motor

As much confusion has arisen over the promiscuous use of the terms "engine" and "motor" the Society of Automotive Engineers has prepared the following bulletin clearly defining the two terms:

"In 1916 the Society of Automotive Engineers prepared in co-operation with engineers and representatives of service departments of automobile companies, a list of standard names for the common automobile parts, in order to eliminate confusion which existed due to the promiscuous naming of parts which had developed in the early growth of the industry.

The standard nomenclature was approved by the Society members and largely followed by service managers in making up parts lists. This has resulted in saving a surprising amount of time and money in the definite and prompt making and filling of orders for parts. Certain names, the use of which was recommended in the nomenclature were, however, not adopted as generally as might be desired, probably the most important of these being the term "engine" for designating an internal-combustion unit of the most prevalent type of automobile the word "motor" being used to a certain extent instead.

"Motor" is the correct name for an electric unit used for changing electrical into mechanical energy, and its meaning as applied to internal-combustion engines can be understood only by the context. An electrical **motor** is commonly used on gasoline automobiles in connection with the starting apparatus.

The continued misuse of the word "motor" is probably due to two factors. It is used, and correctly, to designate a moving vehicle. In addition, many companies building engines were organized in the early years of the industry and included the word "motor" in their official names. As the companies prospered, the names became valuable assets and a change has been considered unwise from a business standpoint.

Nomenclature is, in a last analysis, determined by usage. Many words are common today which are in a derivative sense, entirely illogical, as well as entirely different in meaning from what they meant originally. "Electric motor" and not "electric engine" is, of course, the name for the electric unit; and the term "steam motor" is not used as applying to a prime-mover.

There seems to be a little doubt of the logic and consistency of the use of the word "engine" to denote the internal-combustion or "gas" unit of motor vehicles.

Olds Motor Works is 25 Years of Age

On August 21st, the Olds Motor Works celebrated its 25th anniversary. This firm which has grown into a gigantic General Motors holding, was the product of the farsightedness and ingenuity of two young men, Ranson E. Olds and Frank Clark, both of Lansing, Mich. These men began their experiments in 1895.

In 1898 they finished their first automobile, which is today housed in the Smithsonian Institute in Washington. Shortly after this, Mr. Clark became depressed at the slowness of success of the first car and sold his stock to Mr. Olds, who went to Detroit for more capital, continuing operation in his old plant at Lansing, however. On May 8, 1899, the name of the firm was changed to the Olds Motor Works, and a recapitalization effected. In 1904 Mr. Olds left the company and with H. T. Thomas founded the first offshoot of the organization, the Reo Motor Car Co., at Lansing. W. C. Durant acquired the company in 1910 for the General Motors Corp.

The Olds Motor Works have been meeting with great success with its one-ton truck which is produced along with the Oldsmobile.

Public Support Makes Bus Line Successful

Continued Success Expected in View of the Efficient and Modern Methods Pursued by This Company. Company's Motto is: "Safety First, With Convenient Schedules and Low Rates"

A View of One of the New Attractive Bus Units Now Being Employed by the Inter City Automobile Lines, Inc.
It is shown opposite one of the company's ticket offices

SINCE early July the Inter-City Automobile Lines, Inc., with general offices at 1721-23 Champa St., Denver, Col., has been operating bus lines from Denver to Colorado Springs and Canon City and later to Pueblo. The cordial reception with which this new form of suburban transportation was received by the public of this vicinity has enabled the company to definitely determine its future plans; it has encouraged them to extend its service as fast as possible.

Much public attention was excited when the company's buses first made their appearance on the city streets. The large, attractive and comfortable appearance of the bus appealed to the people, and later, after the usual trial trips, they were convinced of the utility and purpose of the cars. With the support of the public the company commenced working on a schedule basis. This resulted in profitable operation from the very beginning.

The buses are California made Fageols and were designed as complete and special units for the exclusive purpose of passenger service. A feature of the car is the extremely low center of gravity, the running boards being but 16 in. and the floor but 19 in. from the ground. Additional safety and the elimination of side sway are provided for by a wide 68-in. tread, instead of the usual 56. In operation these buses proved as smooth riding as their appearance indicated.

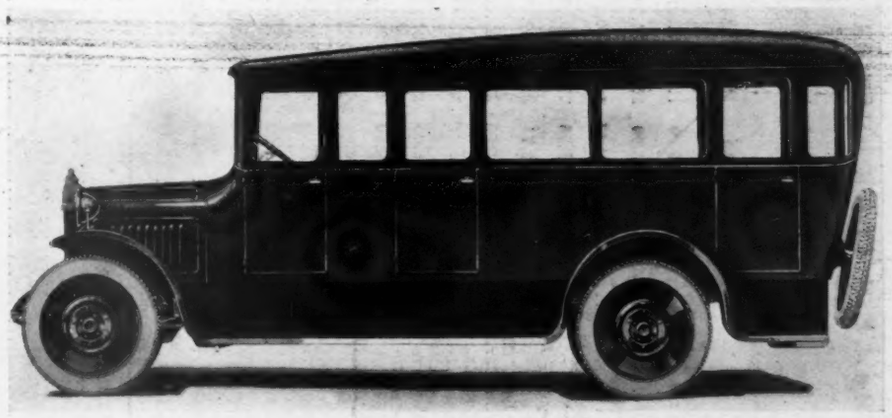
The 64 horsepower engine was designed and built by Colonel E. J. Hall, co-designer of the Liberty motor. The engine and the propeller shaft are suspended from fabric and rubber pads. This construction instead of the usual metallic contact between the propelling mechanism and the body, is claimed to assure insulation against vibration.

The interior of this passenger bus, because of its luxurious furnishings, is more like a parlor car than an automobile bus. Individual backs are provided for the upholstered seats and an indirect lighting system reflects the light against a silver sheet ceiling. The bus is of aluminum and has a capacity for 20 passengers.

At present the Inter-City has three Fageols besides five White auto buses in operation. It has ordered eleven Fageols altogether.

Schedules between the various cities and intermediate points are followed as closely as train schedules. For the tourists the service offers unusual advantages for seeing the wonders and charms of the Denver regions. But the Inter-City does not operate solely for the benefit of visitors. It aims primarily to make its service of importance to the local public. The motto of the company is: "Safety first, with convenient schedules and low rates."

All drivers are impressed of the fact that the success of the automobile transportation company is dependent, largely, on the careful and skillful operation of the coaches. In addition, the drivers, representing the contact point between patron and the company, are required to exercise utmost tact and courtesy in their relations with the passengers. Ten rules governing the drivers were prepared to which all drivers must adhere strictly. Any violation of them is penalized by instant dismissal. The company is determined to provide their passengers with the best of service obtainable.



The New Standard Bus is Similar to the Char-a-Bancs or Motor Coaches so Extensively Used in England

The Standard model 75 chassis, made by the Standard Motor Truck Co., Detroit, Mich., is used for this bus. It has a capacity of ten passengers in addition to the driver. Many features are embodied in this new job. The top construction is of rigid construction; besides there are three full-sized doors on each side, side curtains, provision for storing side curtains when not in use, ample leg room and comfortable seating arrangement. An attractive appearance is presented by the black finish of the top, fenders, hood and trimmings against the maroon of the body and wheels. The seats are topped in genuine leather and the cushions are designed to give maximum comfort. The price will be approximately $2500 f.o.b. Detroit.

Price List of Truck Pneumatic Tire Casings, With Capacities and Inflation Pressures of Larger Sizes

	30 3½	32 4	34 4	32 4½	34 4½	33 5	34 5	35 5	36 x 6			38 x 7			40 x 8			42 x 9			44 x 10		
									Price	Carrying Capacity	Inflation Pressure	Price	Carrying Capacity	Inflation Pressure	Price	Carrying Capacity	Inflation Pressure	Price	Carrying Capacity	Inflation Pressure	Price	Carrying Capacity	Inflation Pressure
Achilles Rubber & Tire Co., Binghampton, N. Y.																							
Achilles Cord, non-skid	30.00	.....	.....	.....	.....	.....	60.00	.....	83.00	2200	90	125.00	3000	100	.....	....	...	.....	....	...	.....	....	...
Acme Rubber Mfg. Co., Trenton, N. J.																							
Acme Cord, non-skid	16.00	29.00	31.00	35.00	37.00	47.00	.....	49.00	72.00	2200	90	90.00	3000	100	.....	....	...	.....	....	...	.....	....	...
Ajax Rubber Co., Inc., New York, N. Y.																							
Ajax Cord, non-skid	14.65	29.15	30.85	37.70	39.50	46.95	.....	49.30	78.55	2000	90	113.85	3000	100	146.65	4000	100	.....	....	...	317.25	6000	130
Amazon Rubber Co., Akron, O.																							
Amazon Cord, non-skid	15.95	29.15	30.85	37.70	39.50	46.95	.....	49.30	70.25	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...
American Rubber & Tire Co., Akron, O.																							
American Cord, non-skid	18.75	34.00	36.00	43.75	45.25	54.25	57.50	56.75	82.65	2300	90	115.40	3100	100	148.70	4100	110	.....	....	...	.....	....	...
Armstrong Rubber Co., Inc., Garfield, N. J.																							
Armstrong Super Size Cord, non-skid	15.95	30.60	32.40	39.60	41.50	49.30	51.00	51.75	86.00	2200	90	120.00	3000	100	156.00	4000	110	.....	....	...	.....	....	...
Blekre Tire & Rubber Co., St. Paul, Minn.																							
Blekre Cord, non-skid	.....	33.45	35.40	41.95	43.90	52.20	.....	54.70	97.50	2200	90	.....	....	...	156.75	4000	110	.....	....	...	.....	....	...
Braender Rubber & Tire Co., Rutherford, N. J.																							
Braender Bull-Dog Super, non-skid	18.00	32.40	34.25	41.90	43.90	52.15	54.10	54.75	78.55	2200	90	113.85	3000	100	146.65	4000	110	.....	....	...	.....	....	...
Brunswick-Balke-Collender Co., Chicago, Ill.																							
Brunswick Cord, non-skid	16.50	29.15	30.85	37.70	39.50	46.95	48.25	49.30	80.45	2200	90	113.85	3000	100	146.65	4000	110	198.36	5000	120	.....	....	...
Burdick Tire & Rubber Co., Noblesville, Ind.																							
Air Bag Cord, non-skid	39.50	58.75	62.25	67.25	70.50	80.00	.....	83.00	143.00	2200	90	184.00	3000	100	238.00	4000	110	.....	....	...	.....	....	...
Canton-Blackstone Co., Youngstown, O.																							
Canton Cord, non-skid	20.00	33.45	35.35	43.25	45.30	53.80	55.10	56.50	82.65	2200	90	115.45	3000	100	148.70	4000	110	.....	....	...	.....	....	...
Columbia Tire & Rubber Co., Mansfield, O.																							
Columbia Cord Giant	17.60	.....	.....	.....	.....	.....	50.15	51.75	81.45	2200	90	.....	....	...	152.10	4000	120	.....	....	...	.....	....	...
Combination Rubber Mfg. Co., Bloomfield, N. J.																							
Combination Viking Cord, non-skid	18.00	32.40	34.25	41.90	43.90	52.15	53.50	54.75	82.65	2200	90	.....	....	...	148.70	4000	110	.....	....	...	.....	....	...
Cooper Corporation, Findlay, Ohio																							
Cooper Cord, non-skid	18.00	32.40	34.25	41.00	44.35	53.75	.....	57.00	81.80	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...
Dayton Rubber Mfg. Co., Dayton, Ohio																							
Thorobred Cord, non-skid	17.95	32.75	34.95	41.75	43.75	51.75	53.50	54.50	82.25	2200	90	120.10	3000	100	155.20	4000	110	.....	....	...	.....	....	...
Empire Tire & Rubber Co., Trenton, N. J.																							
Empire Cord, non-skid	15.95	29.15	30.85	37.70	39.50	46.95	53.30	49.30	76.30	2000	90	108.00	2700	100	139.15	3650	110	.....	....	...	.....	....	...
Erie Tire & Rubber Co., Sandusky, O.																							
Erie Cord, non-skid	15.00	32.40	34.25	41.90	43.90	52.15	53.90	56.75	90.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...
Falls Rubber Co., Cuyahoga Falls, O.																							
Falls Cord, non-skid	19.50	34.00	36.50	43.25	45.75	60.00	62.50	65.00	92.00	2200	90	125.00	3000	100	160.00	4000	110	.....	....	...	.....	....	...
Federal Rubber Co. of Illinois, Cudahy, Wis.																							
Federal Cord	.....	.....	.....	41.45	43.45	51.65	52.95	54.25	70.50	2250	100	98.00	3000	100	125.50	4000	110	.....	....	...	.....	....	...
Firestone Tire & Rubber Co., Akron, O.																							
Firestone Cord, non-skid	17.50	32.40	34.25	44.00	46.10	54.75	56.10	57.50	82.65	2200	90	115.40	3000	100	148.70	4000	110	235.00	5000	120	.....	....	...
Fisk Rubber Co., Chicopee Falls, Mass.																							
Fisk Truck Cord	.....	.....	.....	.....	.....	.....	.....	51.65	70.00	2200	90	97.50	3000	100	125.00	4000	110	.....	....	...	.....	....	...
Gates Rubber Co., Denver, Colo.																							
Gates Cord, non-skid	12.90	28.55	30.75	36.80	38.60	47.65	56.40	49.80	82.85	2200	90	115.70	3000	100	148.90	4000	110	.....	....	...	.....	....	...
General Tire & Rubber Co., Akron, O.																							
General Cord, non-skid	19.70	34.95	37.85	44.45	46.55	54.90	53.75	60.90	83.40	2000	90	116.30	3000	100	153.15	4000	110	239.95	5000	120	334.30	6000	130
Gillette Rubber Co., Eau Claire, Wis.																							
Gillette Cord, non-skid	16.95	29.15	30.75	37.75	39.50	46.90	48.50	49.25	70.50	2200	90	97.50	3000	100	125.00	4000	110	.....	....	...	.....	....	...
Goodrich, B. F., Rubber Co., Akron, O.																							
Goodrich De Luxe Cord	.....	.....	.....	.....	.....	.....	53.50	.....	82.65	2200	90	115.45	3000	100	148.70	4000	110	.....	....	...	.....	....	...
Goodrich Silvertown Cord	13.50	29.15	30.85	37.70	39.50	46.95	.....	49.30	.....	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...
Goodyear Tire & Rubber Co., Akron, O.																							
Goodyear Cord, All-Weather Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	...	119.70	....	...	154.25	....	...	247.85	....	...	346.40	....	...
Goodyear Rut Proof	.....	.....	.....	.....	.....	.....	.....	.....	90.05	....	...	125.75	....	...	161.95	....	...	.....	....	...	.....	....	...
Goodyear Cross-Rib	.....	.....	.....	31.45	32.95	39.10	40.60	41.05	64.30	....	...	89.80	....	...	115.70	....	...	.....	....	...	.....	....	...
Gordon Tire & Rubber Co., Canton, Ohio																							
Gordon Triangle Cord, non-skid	18.00	32.50	34.50	42.70	44.85	53.20	.....	55.85	90.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...
Grand Rapids Tire & Rubber Corp., Grand Rap																							
Corduroy Cords, non-skid	15.95	29.15	30.85	37.70	39.50	46.95	48.20	49.30	85.75	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...
Hewitt Rubber Co., Buffalo, N. Y.																							
Hewitt Cord, non-skid	15.95	.....	.....	.....	.....	.....	51.80	53.25	82.65	2200	90	115.40	3000	100	.....	....	...	.....	....	...	.....	....	...
Howe Rubber Corp., Inc., New Brunswick, N. J.																							
Howe Ultra Cord, non-skid	24.75	33.10	35.45	42.25	44.20	52.00	53.20	54.30	85.00	2200	90	120.00	3000	100	.....	....	...	.....	....	...	.....	....	...
India Tire & Rubber Co., Akron, O.																							
India Cord, non-skid	16.95	28.90	30.70	38.45	40.25	47.70	49.25	50.15	.....	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...

Iowa Cord Tire Co., Inc., Des Moines, Ia.																								
Iowa Cord, non-skid	17.85	29.93	31.68	36.77	38.57	45.79	.....	48.02	68.21	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Kelly-Springfield Tire Co., New York, N. Y.																								
Kelly-Springfield Cord, Kant Slip	18.95	32.75	34.95	42.40	44.30	52.30	.....	54.40	90.90	2200	90	121.50	3000	100	157.50	4000	110	.....	....	...	.....	....	...	
Kenyon Co., Inc., Brooklyn, N. Y.																								
Kenyon Cord, non-skid	22.50	29.15	30.85	37.70	39.50	46.95	54.00	55.30	70.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Keystone Tire & Rubber Co., New York, N. Y.																								
Keystone Cord, non-skid	16.95	29.15	30.85	37.70	39.50	46.95	49.05	49.30	74.60	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Kokomo Rubber Co., Kokomo, Ind.																								
Kokomo Cord, non-skid	15.60	29.15	30.80	37.70	39.50	46.95	.....	49.30	70.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Lee Tire & Rubber Co., New York, N. Y.																								
Lee P. P. Cord	.....	39.85	41.95	54.25	56.75	64.50	66.25	67.75	98.50	1970	90	135.05	2720	100	173.75	3595	110	.....	....	...	.....	....	...	
McClaren Rubber Co., Charlotte, N. C.																								
Autocrat Cord, non-skid	18.75	32.50	34.50	42.80	44.85	53.20	54.85	55.95	82.65	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
McGraw Tire & Rubber Co., Cleveland, Ohio																								
McGraw Cord, rib or non-skid	18.00	32.40	34.25	41.90	43.90	52.15	.....	54.75	78.05	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Madison Tire & Rubber Co., Inc., Buffalo, N. Y.																								
Madison Oversize Cord	21.00	36.90	38.20	45.75	48.00	57.00	.....	60.00	90.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Majestic Tire & Rubber Co., Indianapolis, Ind.																								
Majestic Cord, non-skid	26.35	37.65	39.85	42.55	44.70	53.00	.....	55.70	91.85	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Manhattan Tire & Rubber Co., The, Mansfield,																								
Manhattan Giant Cord	17.60	.....	.....	.....	.....	.....	50.15	51.75	81.45	2200	90	.....	....	...	152.10	4000	120	.....	....	...	.....	....	...	
Marathon Tire & Rubber Co., Cuyahoga Falls, O.																								
Marathon Cord, non-skid	17.75	29.15	30.85	37.70	39.50	46.95	48.15	49.30	74.40	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Mason Tire & Rubber Co., Kent, O.																								
Mason Cord, non-skid	15.80	24.50	25.35	30.75	32.40	38.95	.....	39.95	80.40	2200	90	110.40	300	100	142.20	4000	110	.....	....	...	.....	....	...	
Mellinger Tire & Rubber Co., Kansas City, Mo.																								
Mellinger Cord, non-skid	18.00	32.40	34.25	41.90	43.90	52.15	.....	54.35	90.90	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Michelin Tire Co., Militown, N. J.																								
Michelin Cord, non-skid	15.50	29.15	30.85	37.70	39.50	46.95	48.15	49.30	86.00	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Mid-Continent Tire Mfg. Co., Wichita, Kans.																								
Midco Cord, Universal	22.00	38.75	41.15	45.45	47.50	56.90	.....	59.00	92.50	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Miller Rubber Co., Akron, O.																								
Miller Cord "Geared-to-the-Road"	16.45	.....	.....	39.50	41.50	49.10	50.15	51.25	78.05	....	...	113.85	....	...	146.65	....	...	236.25	....	...	330.00	....	...	
Mohawk Rubber Co., Akron, O.																								
Mohawk Cord, non-skid	17.95	30.70	32.50	39.70	41.60	51.00	51.50	53.55	82.00	2200	90	121.50	3000	100	156.50	4000	110	.....	....	...	.....	....	...	
Norwalk Tire & Rubber Co., Inc., Norwalk, Conn.																								
Norwalk Cord, non-skid	.....	.....	.....	.....	.....	.....	52.55	57.20	75.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Para Belle Tire & Rubber Co., Mansfield, O.																								
Para Belle Grant Cord	17.60	.....	.....	.....	.....	.....	50.15	51.75	81.45	2200	90	.....	....	...	152.10	4000	120	.....	....	...	.....	....	...	
Pennsylvania Rubber Co., Jeannette, Pa.																								
Pennsylvania Cord, non-skid	21.40	29.25	31.05	37.70	39.55	47.00	.....	49.30	76.45	2200	90	95.35	3000	100	134.95	4000	110	.....	....	...	.....	....	...	
Perfection Tire & Rubber Co., Fort Madison, Ia.																								
Perfection Cord, non-skid	19.50	32.40	34.25	41.90	43.90	52.15	53.50	54.75	90.90	2200	90	121.50	3000	100	157.50	4000	110	.....	....	...	.....	....	...	
Standard Fabrics	13.75	25.45	27.35	34.05	36.25	42.15	.....	44.75	.....	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Powertown Tire Corp., Rochester, N. Y.																								
Powertown Cord, non-skid	23.30	39.10	41.00	49.70	53.10	61.00	62.20	63.20	95.90	2200	90	128.25	3400	100	.....	....	...	.....	....	...	.....	....	...	
Quaker City Rubber Co., Philadelphia, Pa.																								
Quaker Cord, non-skid	25.00	29.15	30.85	37.70	39.50	46.95	.....	49.30	85.00	2200	90	115.50	3000	100	.....	....	...	.....	....	...	.....	....	...	
Racine Rubber Co., Racine, Wis.																								
Racine Multi-Mile Cord	14.65	29.15	30.85	37.70	39.55	46.95	47.40	49.25	78.55	2200	90	113.85	3000	100	146.65	4000	110	.....	....	...	.....	....	...	
Republic Rubber Co., Youngstown, O.																								
Republic Cord, non-skid	19.00	33.75	35.85	44.35	46.60	55.25	.....	58.00	82.65	2200	90	115.45	3000	100	148.70	4000	110	.....	....	...	.....	....	...	
Samson Tire & Rubber Corp., Los Angeles, Calif.																								
Samson Super Size Cord, non-skid	18.90	33.90	35.85	49.40	52.60	61.50	63.80	56.95	85.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Spreckles "Savage" Tire Co., San Diego, Cal.																								
Spreckles Savage Cord	.....	31.90	34.00	42.10	43.20	51.70	52.80	54.00	81.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Standard Four Tire Co., Keokuk, Iowa																								
Standard Cord, non-skid	18.90	32.50	34.50	42.70	44.85	53.20	.....	55.85	85.00	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Standard Tire Co., Willoughby, O.																								
Tiger Foot, non-skid	18.00	32.40	34.25	41.90	43.90	52.15	.....	54.75	82.65	2200	90	115.45	3000	100	.....	....	...	.....	....	...	.....	....	...	
Star Rubber Co., Inc., Akron, O.																								
Star Meteor Cords	18.90	33.60	35.50	42.50	44.45	52.20	53.65	55.00	80.50	2200	90	112.80	3000	100	.....	....	...	.....	....	...	.....	....	..	
Swinehart Tire & Rubber Co., Akron, O.																								
Swinehart Cord, non-skid	20.00	35.20	37.25	45.55	47.70	56.70	55.00	59.50	82.80	2200	90	115.65	3000	100	.....	....	...	.....	....	...	.....	....	...	
Syracuse Rubber Co., Inc., Syracuse, N. Y.																								
Syracuse Syra-Cord, non-skid	18.30	32.50	34.50	42.45	44.0	52.85	54.00	55.50	78.55	2200	90	113.85	3000	100	146.65	4000	110	.....	....	...	.....	....	...	
Syracuse	16.75	29.15	30.85	37.70	39.50	46.95	48.60	49.30	.....	....	...	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
Thermoid Rubber Co., Trenton, N. J.																								
Thermoid cord, non-skid	.....	33.05	34.95	42.75	44.80	53.20	54.60	55.80	84.30	2200	90	117.70	3000	100	.....	....	...	.....	....	...	.....	....	...	
Traveler Rub. Co. of Bethlehem, Bethlehem, Pa.																								
Traveller Cord, non-skid	19.60	32.40	34.25	41.90	43.90	52.15	.....	54.75	83.60	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	...	
United States Tire Co., New York, N. Y.																								
United States Cord, non-skid	.....	.....	.....	.....	41.55	.....	50.55	51.75	81.35	2200	90	117.95	3000	100	152.00	4000	110	.....	....	...	.....	....	...	
Victor Rubber Co., Springfield, Ohio.																								
Victor Cord, non-skid	19.00	34.10	36.05	41.90	43.90	52.15	53.50	54.75	82.65	2200	90	.....	....	...	.....	....	...	.....	....	...	.....	....	..	

Indiana to Introduce New One-Ton Speed Truck

A NEW Indiana one-ton speed truck, known as the "Highway Express," will make its appearance on the market shortly, according to an announcement just made by the Indiana Truck Corp., Marion, Ind. Its maximum speed will range from 30 to 35 m.p.h. At 2000 r.p.m. the truck is claimed to make 33 m.p.h.

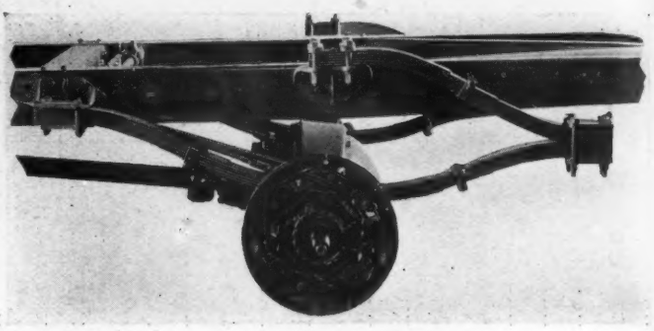
The announcement further states that this new job will embody several new constructional features. The factory is preparing to swing quantity production on this new one-tonner which has already been out in actual work and demonstration. It will sell at $1425.

The engine is a special Waukesha having a bore and stroke of 3¾ in. x 5¼ in. The crankshaft rotates in three main bearings of generous dimensions. All bearings except piston pin bearings are lubricated by the force feed system with gear pump. The cooling system includes a centrifugal pump and a pressed steel shell radiator with removable core. Gasoline is fed from a 15-gal. tank located in the cowl to a Stromberg carburetor. Ignition is by Bosch generator and distributor with Prest-O-Lite battery.

From the engine, power is carried through a dry-plate clutch, completely inclosed in a housing, to a Brown-Lipe model 30 transmission, providing three speeds forward and one reverse. Low gear ratio is 4 to 1. Engine, clutch and transmission are mounted in unit. The rear-axle is a spiral bevel drive, semi-floating type. Drive is taken by a single propeller shaft of 2½-in. tubing, with universal joints at each end.

Timken Duplex internal expanding brakes on rear wheels with 15 in. drums are used. The rear axle pinion has the straddle bearing mounting, which serves to cut down the load on the pinion shaft bearings. The frame is of pressed steel construction, 5 7-16 in. deep, with a 3¼-in. flange. The distance from back of driver's seat to end of frame is 98 in. Steering is through a worm and nut type steering gear.

The spring construction is of the ¾ elliptic type, both front and rear. They are made of silicon manganese alloy steel and are 2½ in. wide, front and rear. The principal feature of the spring construction is the arrangement of the leaves, and the elimination of all shackles and ground bolts. No lubrication is necessary. The manufacturer states that this type of spring is especially advantageous to a speed truck for it gives added protection to the load. Both the drive and torque reaction are taken by these springs. The drive is taken through six main plates instead of one main plate, as in the conventional form of Hotchkiss drive.

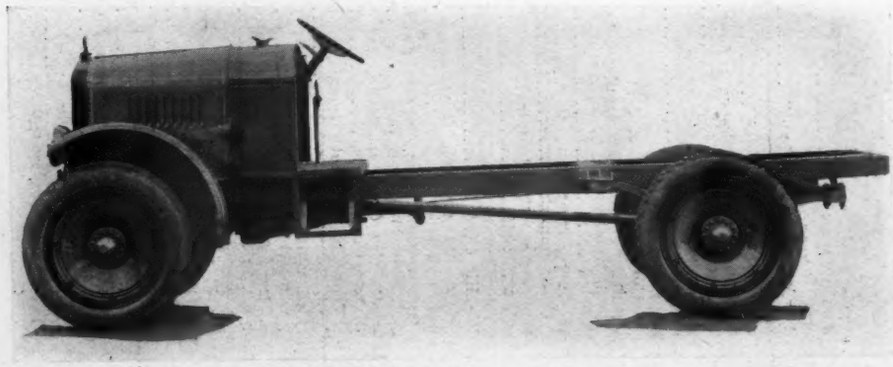


Showing the New ¾ Elliptic Spring Construction. The Principal Feature is the Arrangement of the Leaves and the Elimination of All Shackles and Ground Bolts.

Increased Resilience and Smooth Operation Results From This Spring Construction

Wheels are disk steel, equipped with the Firestone steel felloe band, which mounts a demountable rim. 34 x 5 in. pneumatics are used on all four wheels.

Standard equipment includes electric starting and lighting, motometer, front fenders, stirrups, tool kit, jack, electric horn and one spare rim.



Side View of the New One-Ton Highway Express Indiana Speed Truck

Buick Line Consists of Six Body Types

THE Buick 1923 line of Special Delivery cars will consist of six body types on the four-cylinder chassis, and will include many changes in the mechanical construction of the car as well as an entirely new list of prices.

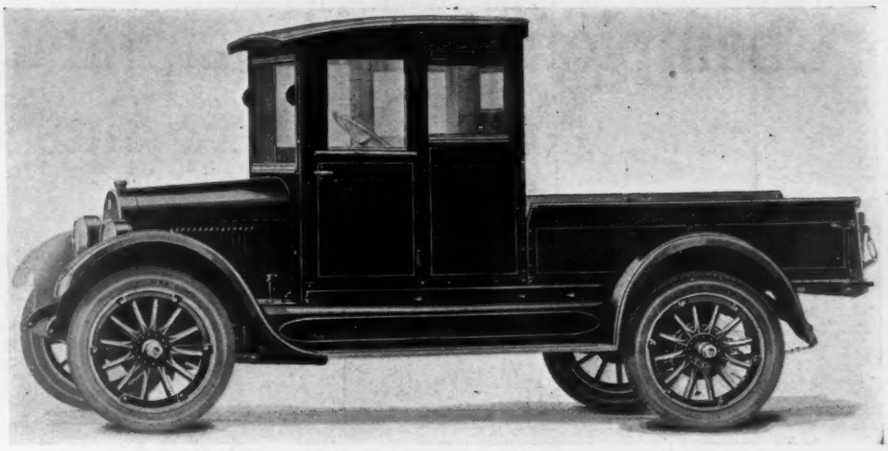
The models for the next year will comprise an open express body with a cab, which will sell at $840; a panel body with a cab to be marketed at $860; a canopy top with rolled curtains and cab, the price of which is $855; a canopy top with side screens and cab to sell at $875; a de luxe panel body with cab to sell at $960 and a combination passenger and express body with cab to sell at $935. All the new prices are f.o.b. factories with war tax to be added.

Many mechanical changes have been made. Crowned fenders have been added together with drum type headlights, a redesigned radiator, which sets much higher, rubber bumpers on the rear axle, special anti-rattle hood catches, silent over-running generator clutch and a new glass switch face. A transmission speedometer drive, a lengthened gearshaft and a transmission lock have also been included in the new models.

Felts have been placed around the valve stems to carry oil to the stems and guides and a new system of generator brushes and brush arms has been used to prevent squeaks.

The size of the strut and truss rods has been increased and heat treated steel has been used. Another distinct feature of the new delivery models is the brake improvements. Twelve bolts have been used on every wheel hub, giving a separate bolt for each spoke and a much stronger construction.

These models have also been placed in Class "A" in fire insurance ratings. To accomplish this, the Buick engineers installed a drip bowl under the carburetor, extra clips on gasoline lines and tail lamp wires and the use of flexible steel coverings on three wires leading from the generator to the switch. The rounding of corners on all covers for wires also was taken care of: Transmission lock equipment is also provided.



Buick Open Express, One of the 1923 Line of Special Bodies

G. M. C. Brings Out Three New Tractor Models

THREE new tractor models were recently included in the transportation line of the General Motors Truck Co., Pontiac, Mich. They are of five, ten and fifteen tons in capacity and are known as models K-4IT, K-7IT and K-10IT, respectively. All three models are built along the same design and are identical in construction except for the difference in capacity of the various components. The engines are of GMC design and construction. The cylinders and crankcases are cast in unit. These cylinders, four in number and water-cooled, are removable and of the sleeve type. The bore and stroke of the lightest model is 4 in. x 5½ in., which provides an S. A. E. hp. of 25.6 and actual hp. at governed speed of 37. The bore and stroke of the two heavier models are alike, 4½ in. x 6 in. The S. A. E. hp. is 32.4 and actual hp. at governed speed, 51.

Lubrication is by positive pressure system from gear pump. Oil is forced with constant pressure to all bearings of the engine. Chassis lubrication is by the pressure gun system. The carburetor is of the GMC two jet type with special heated intake manifold. Fuel is fed by gravity from a sheet steel tank of 20½ gal. capacity. A high tension magneto with impulse starter coupling provides ignition.

The cooling system is a combination pump and thermo-syphon. Pump capacity is approximately 20-gal. per minute. The radiator is of the continuous fin, tubular, built-up type, having a capacity of 7½ gal.

Clutch is of the multiple disk, dry-plate type, and the transmission of the selective two range type. Each range provides four speeds forward and one reverse. Provision is made for power take-off and tire pump.

The rear-axle is of the worm, full-floating type. Drive from the rear axle is taken through radius rods to the frame. The gear reductions for the three models, starting 5-ton capacity are: 8.5 to 1; 10 1-3 to 1; and 11 2-3 to 1.

The frame is of open hearth steel, heat treated. Both service and emergency brakes are of the internal expanding type. Brake rods are interchangeable. The wheels are metal and of the hollow spoke type. Solid tires are to be used throughout.

Left hand steering and center control. Spark and throttle levers are located on a segment with connections outside of steering column. The foot throttle is operated by the driver's right foot. Ignition and light switches, oil gage, ammeter and choker throttle are mounted in an instrument case located on the dash.

A convertible steel type cab is provided as standard equipment. The top, back and sides and windshield of this cab are removable.

Standard equipment includes electric head lights mounted on the radiator side members, electric tail light, generator and storage battery, electric horn, tool kit and jack.

Other interesting specifications are disclosed by the following:

Tires: 5-ton model, 36 x 4 front, 36 x 8 rear; 10 and 15-ton models, 36 x 5 front and 40 x 12 and 14 single rear. Road clearance: 9½ in., 10¼ in. and 9¾ in., respectively. Wheelbase: 127 in., 138 in. and 138 in. respectively. Turning radius: 21 ft., 22½ ft. and 22½ ft. respectively. Weight of chassis: 5510 lb., 8364 lb. and 9186 lb., respectively.

Automobiles Saving the Rural Schools

Eighteen thousand rural schools are furnishing transportation for pupils to and from their homes. Through the motor bus the consolidated rural school is made possible and the number of consolidations is going forward at the rate of about 1000 per year. There are still 180,000 one-room schools which should be consolidated. Since a consolidated school combines several adjacent school districts into one school it means a larger and better equipped school house. Since in the one-room rural school one teacher teaches all grades from the kindergarten to the eighth grade, while in the consolidated school each teacher instructs but two or three grades, this means fewer and more highly qualified teachers and better teaching.

Ten-Ton G. M. C. Tractor Drawing a Semi and Four-Wheel Trailer Up a 9½ Per Cent Grade With a Total Load of 17 Tons

Champion Auto Equipment Announces New De Luxe Bus Body

Showing One of the New Champion Auto Equipment 25 Passenger De Luxe Bus Bodies

A NEW 25-passenger de luxe bus body, which embodies many new bus features of construction and contains interior furnishings and fixtures which are designed for maximum passenger comfort, was recently announced by the Champion Auto Equipment Co., Hammond, Ind. This new body not only provides an attractive appearance, but commodiousness as well, being 75 in. high and 80 in. wide inside measurements. Length 20 ft. over all.

The body is set on the chassis frame and reinforced with cross extension supports. The cross sills are 4 in. x 1½ in. steel channel set with No. 1 white oak cross sills. All the joints are mortised, glued and set with screws, and all uprights are strengthened with steel. The roof is supported by cross bows. It is constructed of beaded slats over which canvas is glued, wadded and covered with heavy roof material. The panels are of aluminum, the seams of which are covered with aluminum molding. Proper padding between uprights and panels are stated to eliminate squeaking noises. Wood panels are also used in the interior on all sides from floor to belt line. The ceiling is also panelled.

Double folding doors, operated by pull lever situated near the driver, are provided at the front entrance. An emergency door is provided at the rear center. The floor is of hard maple tongued and glued.

The window assembly includes Rex brass sash window frames with copper weather strips on the sides and rubber on the top and bottom. The window raise glass is set in rubber. Brass outside guard rails are also furnished.

The windshield is of the "V" plate-glass type having sun-shade, drip moulding, Folberth automatic cleaner, and mirror on the left front side.

Interior illumination is provided by three dome lights mounted on each side of the body. Other lights include entrance step light, two rear lights, two front top lights. Signal buttons are provided in the posts between the windows.

The heating system provided for winter driving consists of an exhaust pipe heater connected to the exhaust pipe. The pipes extend along the sides. This job is also equipped with Vapor Car Heating System, fasteners and guards. Brass quick-acting valves are used.

The pedestals and frames of the seats are of Heywood & Wakefield make. The 8 in. spring cushions are stuffed with curled hair and finished with No. 1 buffed leather. The backs are of same construction. Brass handles are provided at the upper inside corner of all these cross-wise seats. The driver's seat is of the bucket type, cushioned with the same material. Hinged type guard rails separate the driver from the rest of the compartment. A curtain is provided at the rear of the driver's seat.

Racks are on each side of the body along the top for standard advertising cards. The interior is stained in natural wood finish.

Many New Features Embodied in New Commerce Coach

THE Commerce Coach, Model 25, recently introduced by the Commerce Motor Car Co., Detroit, Mich., contains many features designed for the comfort of passengers. It is equipped with a model 6-T, six cylinder Continental engine, which is claimed to do away with the vibration incident to the use of four cylinder engines. The wheelbase of this chassis is 198 in. and the body is given augmented support by eight flanges, placed at the points of greatest stress. Special spring suspension with 60-in. rear springs give great flexibility and easy riding qualities.

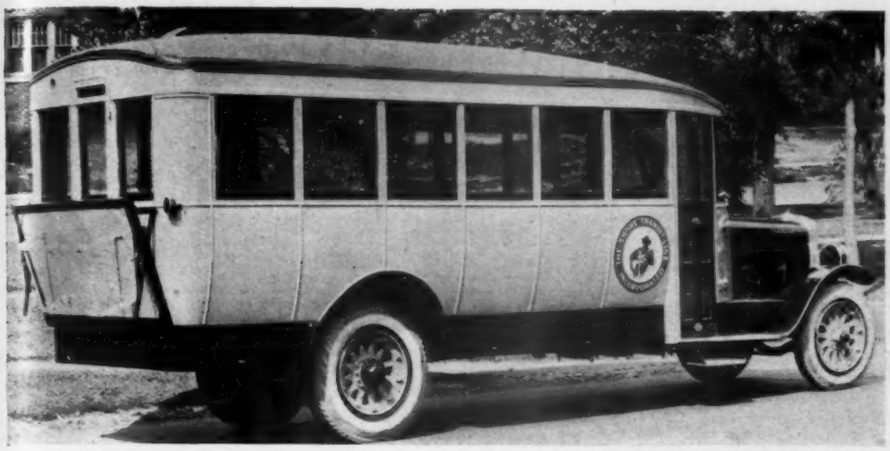
Timken axles front and rear, Brown-Lipe six-plate multiple-disk clutch and Brown-Lipe amidship transmission are used. This transmission provides four speeds forward and one reverse direct drive in fourth. Two types of wheels are optional, the wood artillery type, using 36x6 cord fronts and 40 x 8 cord rear tires and the Michelin steel disk wheels all around, using 36 x 6 tires with dual pneumatic rears.

The chassis is built with the necessary strength to endure the heavy duty service exacted by a bus employed in passenger transportation. Notwithstanding the increased strength the necessary speed required in quick service was not sacrificed. All the units of this job are reputable and well-known.

The body presents an attractive appearance, particularly the front end and its rolling top. Baggage compartments are conveniently arranged on both sides and in the rear. Personal baggage, of which there is quite a bit in interurban travel, is cared for by a copious luggage carrier.

The entire bus is painted in battleship gray. Parking lights, "stop" and drum

Interior, Showing the Seat Arrangement and Types of Seats. All Furnishings Make for Passenger Comfort



This Bus Used by a Shore Transit Line, is One of the New Commerce Coaches Recently Introduced by the Commerce Company. It Contains a Number of New Features in Bus Construction

type head lights on the chassis are part of the exterior equipment. The interior is also attractively finished.

The seats which are individual and upholstered in Spanish leather provide ample knee room. Illumination is provided by six large dome lights in the center and the windows are all equipped with roller shades. A complete electric buzzer system as well as electric heaters which run around the entire length of the coach inside make up part of the electrical equipment.

One of the features of the bus is the speaking tube which runs from the exterior of the rear to the interior front by the driver's seat. This is a safety device, enabling the driver of the coach to hear all approaching noises from the rear, including horns of other automobiles desiring to pass.

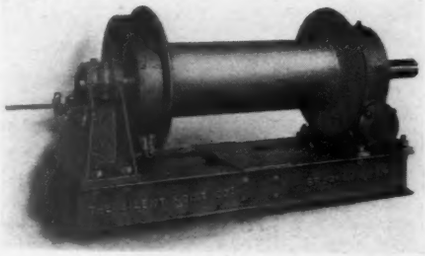
The windshield is of the ventilating "V" type. Roof ventilators, as well as dash ventilators in the front and with a convenient stop light rendering safety to passengers alighting and entering the coach are other features.

The Commerce Motor Coach was primarily designed for the Shore Transit Line Co., Inc., of Salisbury, Md. This company is preparing to give to the people along the shore line of Maryland, running from Salisbury into Baltimore, exceptionally high class motor passenger transportation. The initial equipment will include ten of these Commerce Model 25 Motor Coaches.

Silent Hoist Truck Winches

THE Silent Hoist Co., 302-304 McDougal St., Brooklyn, N. Y., is manufacturing a line of capstan winches, drum winches and cranes especially designed for mounting on motor trucks and tractors to be driven by their engines for loading, unloading and hoisting machinery, boilers, smoke stacks, stones, etc. This type of equipment is in constant demand by telephone, telegraph, gas and electric companies for cable pulling, pole setting, etc. It also enters importantly in house-moving, rigging, general contracting, and in oil field service.

The model T vertical capstan winch, one of the Silent Hoist line, is described as a powerful, compact, water, dirt, and fool-proof machine. It is claimed to be most economical in work of a loading and unloading nature, accomplishing a variety of such heavy-duty service in and with minimum time, labor and effort. The Silent Hoist, non-reversible, worm drive of this machine, which prevents backward turning of the winch head should the engine stop or the driving chain break, is claimed to assure absolute safety. Manila rope is recommended for



Model TA All-Steel Silent Hoist Jaw Clutch Drum Winch

use in connection with this capstan. The following is a brief outline of specifications and data:

Rope pull (on a single line)—5000 lb.
Rope Speed (on a single line)—50 to 60 ft. per min.
Winch head—6½ in. diam. by 12 in. high.
Space required—16 in. square.
Weight—240 lb.
Worm gear ratio—28 to 1.
Sprocket for ¾ in. pitch ½ in. wide roller chain.
Worm gear is of phosphor bronze.
Worm is of nickel-steel, hardened, ground and polished.
Two sets of phosphor bronze and hardened steel collar bearings take worm thrust in both directions.
All bearings are of phosphor bronze and easily renewable.
The whole mechanism runs in oil in an oil-tight and dust-tight gear case.
The winch head is accurately balanced, machined all over, and polished, and fitted with a bronze cover plate.

Another machine of the line frequently used is the model TA all-steel jaw clutch drum winch. This winch is for mounting on the chassis back of the driver's cab. It is made entirely of steel and bronze, which, together with its design, is claimed to give compactness with power. This machine is furnished with two controls, one for actuating the clutch and the other for the brake. The hand levers together with the ratchet segments, etc., are

This Service Truck Has Included in Its Complete Equipment a Model D Friction Drum Winch.

Silent Hoist Model T Vertical Capstan Winch

usually located in some convenient position along side of or inside of the driver's cab or as an integral part of the machine. It is usually furnished with a winch head. This model is used more commonly by telephone and general public service companies. The non-reversible worm drive feature is also embodied in this winch. Among some of the important constructional features are the following:

The drum is of cast steel, accurately balanced, bored and machined. Engagement of eight heavy steel jaws is claimed to assure positive clutch action. The band brake is Raybestos lined and readily adjusted. The cross frame is fabricated from structural steel, making for a self-contained and rigid unit, and the side frame bearing bracket is of cast steel. Brief specifications and data follow:

Lifting capacity—12,000 lb. at 50 to 75 ft. per min.
Drum dimensions—23¼ in. long by 8 in. barrel diam. by 16 in. flange diam.
Drum capacity—1100 ft. ½ in. or 750 ft. ⅝ in. or 500 ft. ¾ in. cable.
Winch head—6¼ in. by 9¼ in.
Space required behind driver's cab—16 in.
Weight, complete, including steel cross-frame—500 lb.
Worm gear ratio—28 to 1.
Sprocket for 1 in. pitch ¾ in. wide roller chain.

The Jiffy Dump Body

THE Griscom-Russell Co., 90 West St., New York City, announces that it has placed on the market a new dump body for Ford one-ton trucks. This body, known as the Jiffy Dump Body, is shown in the accompanying illustrations.

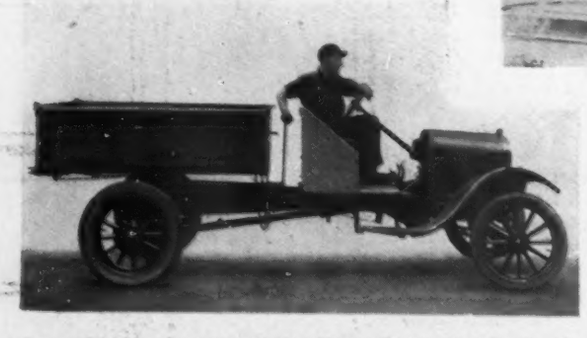
The low over-all height of this steel dump body when mounted on a Ford chassis is claimed to practically eliminate danger of upset as well as facilitate easy loading.

Close-up of the Jiffy Body in Dumping Position. The Principle of Its Mechanism May Readily be Seen

Both the construction and operation are simple. One of the features of construction described as distinctive is the scale balance support which means that there is no hoist and that the body dumps automatically upon releasing the locking device. The elimination of hoist is said to have simplified construction and operation. The driver can operate the body from the seat without stopping the truck. The dumping operation is as follows: Driver releases locking device and body automatically tilts until it reaches a 45-degree angle, at which point the tail gate automatically opens and the load dumps. The tail-gate can be adjusted so as to spread material to any desired thickness. The gate is also of the the double-acting design, permitting change to express body. The inside of the body is smooth, there being no obstructions nor seams. The bottom and sides are made from one piece of No. 10 gage steel.

The scale balance support is about 5 in. in front of the rear axle, giving an even distribution of the load on the chassis.

The manufacturers report that the Jiffy Dump Body is meeting with unusual interest in the trade and that the demand for it is beyond all expectations. Some of the reasons for this are scale balance support, permitting automatic operation and absence of all levers and hoist, and the fact that there is no separate sub-frame as the sub-frame is welded directly to the all steel body.



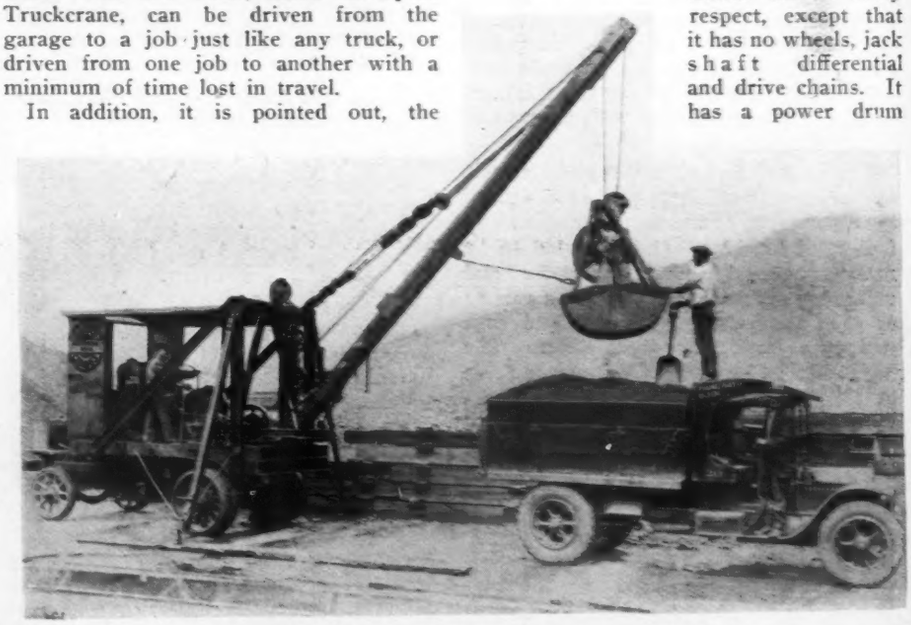
Body Dumps Automatically Upon Releasing the Locking Device, Which is Performed as Illustrated

Motor Truck Mounting for Byers Crane

A BIG forward step in taking the crane to the job has been made by the Byers Machine Co., Ravenna, Ohio, in bringing out a crane that can be mounted permanently on a motor truck. The new outfit, called the Byers Truckcrane, can be driven from the garage to a job just like any truck, or driven from one job to another with a minimum of time lost in travel.

In addition, it is pointed out, the strength and comparative lightness of the unit, opens a new field of crane service. Owners whose work has hitherto been too limited to operate a large crane, can now use a machine of the Truckcrane type at a profit. It should prove an ideal piece of equipment for general contractors, material and supply dealers, counties, municipalities, and industrial plants.

The crane, unmounted, weighs six tons, and is similar to the Byers Auto-Crane Model One in every respect, except that it has no wheels, jack shaft differential and drive chains. It has a power drum for raising and lowering the boom which is of steel.



Showing the Utility of the New Byers "Truckcrane"

The crane is furnished with a Hercules four-cylinder 4 x 5 in. gasoline engine, developing over 30-hp. Any half cubic yard bucket weighing not over 2000 lb. can be used with it.

This company is increasing its capacity to manufacture the Truckcrane on a large production basis.

TRUCK EQUIPMENT AND APPLIANCES

Atlas Machinery Introduces Two New Axles

THE Atlas axle was developed after three years of experimental and test work by the American Machine Co., Newark, Del., prior to the recent organization of the Atlas Axle Co., a combination of interests with the Lobdell Car Wheel Co., Wilmington, Del.

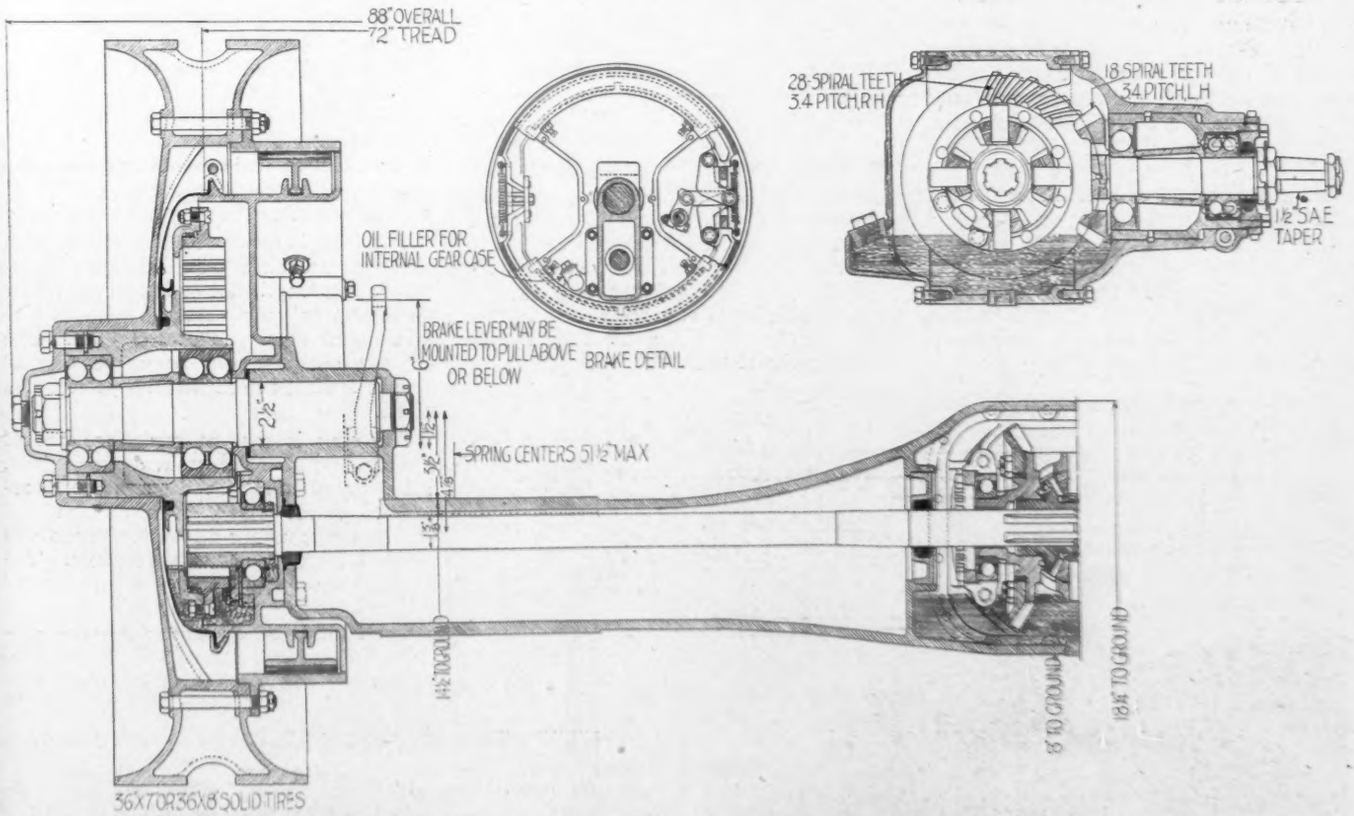
Two models of the Atlas axles are being brought out designated the LC Series. The Model LC8 of 8000 lb. capacity on spring pads is in active production now, and the Model LC12 of 12,000 lb. capacity will follow a little later. The former is suitable for the average 25-30 passenger single deck motor bus, and the latter for double deck buses. Although, primarily for motor bus service, the LC8 axle lends itself to many forms of low center of gravity use where bulky and top heavy merchandise is to be transported; such as furniture vans, rolling stores, trucks for hauling empty barrels, cotton bales, plate glass, etc.

Since an axle is subjected to two distinct classes of stress, one imposed by a load applied vertically at the spring seats, and the other due to changes of momentum applied in the form of torsion at the spring seats, the section of the supporting member has been so designed as to meet these conditions with the minimum fibre stress. The housing, oblong in section, with the long axis in the vertical plane is considered the best shape to resist these two classes of stress with a maximum efficiency of material. The use of this section also has the advantage of providing space for the enclosure of the drive shafts, so that without any complication and with considerable saving in weight, all the working parts are protected from road shock and vibrational damage.

The double reduction internal gear drive with the driving pinion at the lowest point of the gear circle, in conjunction with a flattened differential housing, affords a maximum floor clearance above the differential, and ample ground clearance below it. With 36-in. wheels, a 24-in. frame height and a 1-in floor there is 8-in ground clearance and 6¼-in floor clearance without kicking up the frame or underslinging the springs. The wide tread and spring centers of 72-in. and 51½-in. respectively, insure the stability of the motor bus.

To offset the dangers incident to neglect in lubrication, some radical departures were made from conventional practice. First of all, there is not a grease cup or an oil cup in evidence. The brake shafts turn in graphite and bronze bushings and all gears and bearings operate in an oil bath. The differential and bevel gears are enclosed and run in oil in the usual manner. The same form of lubrication obtains with the internal gears and spur pinions in the wheels and leakage is prevented by a patented running joint. Briefly, this operates as follows:

The inner hub, to which is secured the internal gear, is enshrouded by a pressed steel diaphragm of the shape of a large saucer, which in turn is clamped to the rim of the brake anchor disk by a clamp ring and one bolt. This one-piece



Blueprint Reproduction of the Special Motor Bus Axle Recently Perfected by the Atlas Axle Company, Wilmington, Del.

Included in the specifications are the following: Permissible load on spring pads, 8000 pound; maximum allowable engine torque, 190 foot pound; standard gear ratio, 6.6 to 1; optional gear ratios 6 to 1 and 7 to 1; brake single internal expanding, 3 in. x 21 in.; approximate weight complete with wheels, 1100 pound; and designed for Hotchkiss drive, but brackets for radius rods can be furnished

diaphragm forms the enclosure and becomes the container of about two quarts of heavy oil introduced through a plugged filler spout in the brake anchor disk. The revolving action of the internal gear carries the oil to every point of the enclosure including the wheel and spur pinion bearings. The excess of oil which is thrown over the top of the gear carrier flows back by gravity until it encounters the semicircular, stationary gutter riveted at the top and inside the oil diaphragm. This deflects the majority of the oil and returns it to the bottom of the case, but what little splashes past this gutter falls into a channel turned on the inner hub where it works out on to a fin or "slinger" and is thrown off by centrifugal force to fall to the bottom. A felt washer outside the "slinger" completes the enclosure at the inner hub but this is not necessary to prevent oil leakage and simply excludes any dirt or dust. The complete axle lubrication as derived from these three oil baths, one in the differential enclosure and one in each wheel, is stated to be positive and fool-proof.

Especial attention has been given to accessibility. The entire differential assembly is removable as a unit from the front, and a detachable cover plate at the rear provides for bevel gear and pinion adjustment. The wheels, with the hub cap cast integral, are demounted by removing the nuts on the ten ½-in. driving studs and inserting an ordinary one-inch bolt in the center of the hub cap as a wheel puller. The wheel comes off without disturbing any bearings or the integral gear lubrication. With the wheel off, the removal of the one oil diaphragm clamp bolt discloses the driving gears. The internal gear and inner hub can then be taken off by the removal of the wheel spindle nut which exposes the driving pinion and allows the pulling of the drive shaft.

One set of internal brakes only is provided. These may be linked up for either service or emergency use, but as their proportions are ample, 3 in. x 21 in., and their efficiency so high they are recommended for service use.

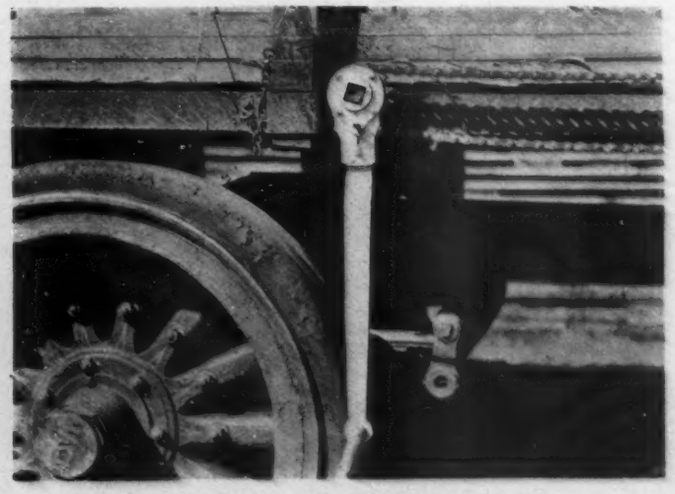
This internal expanding brake, it will be seen, is toggle actuated with cast metal shoes. Departing from usual practice, the brake anchorage is at the front or point of toggle application and consists of a cast boss on the brake anchor disk against which the ends of the brake shoes abut. When a brake is applied against a revolving drum, the tendency of course, is for the brake shoes to attempt to follow the drum, which must be resisted by the anchorage. In this, a full wrapping brake, the anchorage being located at the farthest point on the periphery, no matter which is the direction of wheel rotation, the brake bears all the way around. The toggle links being in a reverse position direct the thrust toward the center of the brake shoes which results in a better distribution of wear and entirely overcomes the general tendency to wear off the points. Adjustment for wear of the brake lining is accomplished by a simple wedge block located at the junction of the rear ends of the shoes. The actual diameter of the entire brake is restored by a threaded screw which draws in the wedge block the necessary small amount. The brake shoes are guided and held in place by a cast web on the inside of the shoes which in turn is a loose fit in slots turned in bosses on the brake anchor disk.

Cast metal wheels of own manufacture, are furnished as part of the axle. These may be had for either 36 x 7 or 36 x 8 plain solid tires; or with the felloe machined to take a cushion element; or for 36 x 6 dual pneumatic tires. All castings in the axle are certified malleable iron except the brake drums. The differential is especially made by the Brown-Lipe-Chapin Co. The single row ball bearings are Gurney's, S. R. B.'s and New Departure's.

The differential drive gear and its pinion mate are 3½ per cent nickel-steel, annealed before machining and copper plated before cutting the teeth which are subsequently hardened. The pressure angle is 20 deg. and the spiral angle is 29 deg. 19 mins. The pitch is 3.4. Note that the differential drive gear is splined to its carrier, thus relieving the attachment bolts of all torsional and shearing stresses and insuring a quiet and true running gear. The side thrust only is taken by the bolts. The internal gears are also splined to the inner hub flange. These are 1¾-in. face, 4/5 pitch and 20 deg. pressure angle.

New Safety Crank for Use in Unloading Lumber Trucks

It is a reversible ratchet wrench particularly adapted for use on platform rollers of lumber motor trucks. Its use eliminates accidents and reduces the labor of loading and unloading. Ordinarily the crank is pulled off the roller shaft before the load is ready to tip and then upon starting the motor the truck is jerked from under the load. But with this new device the load is cranked past the tipping point and the crank is held in the hand while the rollers turn swiftly under the falling lumber. This crank is manufactured by the Washington Machinery and Supply Co., Spokane, Wash.



Safety Crank for Unloading Lumber Trucks

Chuck-O-Gauge

The Chuck-O-Gauge is a combination air chuck or valve and tire gage which, when applied to the tire valve, is said to automatically and instantly register the number of pounds of air in the tire. It is manufactured by the R. & C. Mfg. Co., San Francisco, Cal., and distributed solely by Montgomery Brothers, New York, Chicago, San Francisco.

When used with an air line attached for inflating the tire, it permits the job to be done more quickly as well as more accurately, as in the latter case the air pressure can be determined at any instant while the tube is being filled by simply releasing the button "A."

Chuck-O-Gauge. It is of Brass, and Sells at $5

Everyday Piston Ring

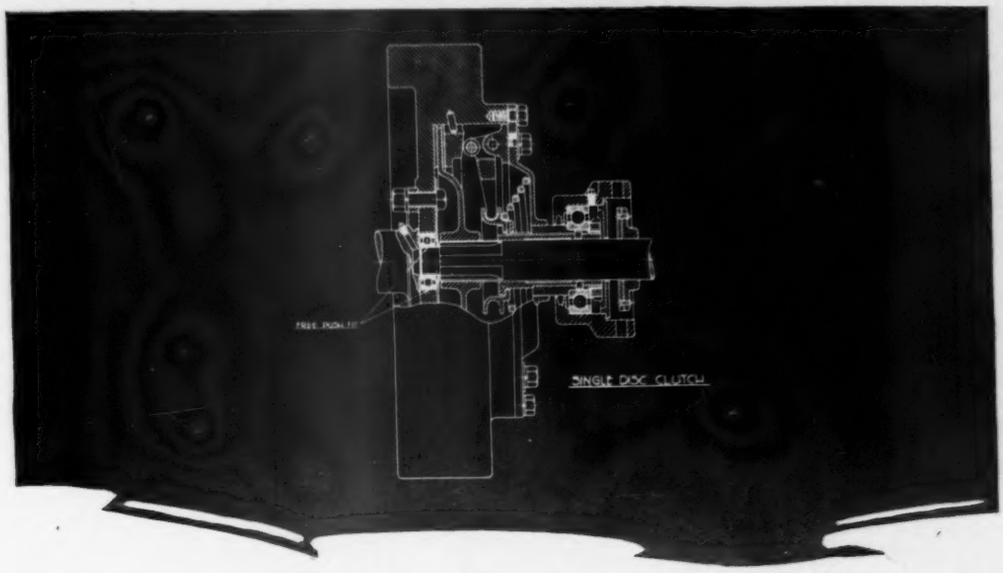
The principal advantage claimed for the Everyday piston ring, produced by the Everyday Piston Ring Co., Inc., East Rochester, N. Y., is its patented interlocking and overlapping joint, which is claimed to lock edgewise, lengthwise and widthwise. This construction is stated to be especially effective in both holding the compression and preventing the passage of oil, particularly after the ring has worn in.

The joint is constructed of two diagonally opposed tongues and recesses, which allow for a lengthwise or lateral expansion up to approximately .010 in. without permitting an open gap at the joint. The deepcut, oblique-angle, power packing oil groove is stated to maintain a perfect film of oil.

The ring is cast in one piece out of round, tough, close-grained gray iron, lathe turned to a special curvature to assure a velvet finish, even tension and wall pressure under all compressions and temperatures, easy fit, and fast seat. The manufacturer points out that because of the range of expansion of this ring only a small stock of oversizes need be carried. List prices: Up to 4 in. $0.50; 4 to 4½ in. $0.60; 4½ to 5 in. $0.70. Sizes 2 to 5 in. ranging in 1-16 in.; oversizes, .010 in., .020 in., .030 in.

Showing Interlocking and Lapping Joint

SKF



Deep-Groove Ball Bearings on the Clutch Protect this Vital, Inaccessible Part

IF THE clutch bearings wear, stick or bind, necessary repairs—no matter how simple they may be—often necessitate an expensive time-consuming dismantling of the entire clutch and transmission.

When deep-groove ball bearings, as made by the Hess-Bright Manufacturing Company, are used at the throw-out there is no appreciable wear, and only infrequent lubrication is necessary. Deep-groove ball bearings will take thrust loads in either direction as well as radial loads and, unlike other types of throw-out bearings, operate equally as well when the clutch is in as when subjected to the thrust of the clutch spring and throw-out yoke. Furthermore noise which invariably accompanies the use of thrust bearings at the throw-out, as is also the need for adjustment, is eliminated by the use of deep-groove radial ball bearings.

Deep-groove ball bearings are self-contained, permitting ready assembly of the clutch shaft, despite the restricted space in which to work.

For ease in assembly and protection against heavy unnecessary repair costs specify deep-groove ball bearings in the clutch.

THE HESS-BRIGHT MANUFACTURING COMPANY

Supervised by SKF INDUSTRIES, INC., 165 Broadway, New York City

(756)

Races displaced to show DEEP-GROOVE bearing carrying maximum end thrust in a forward direction.

Races displaced to show THE SAME bearing carrying maximum thrust in reverse direction.

BALL BEARINGS
The Highest Expression of the Bearing Principle

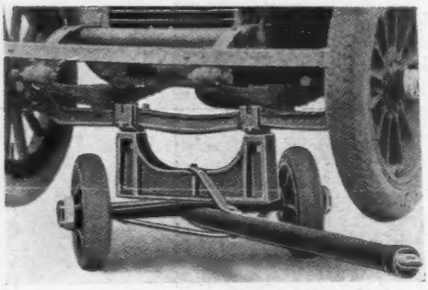
THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Kimkin Towing Dolly

In summarizing the merits of the Kimkin Towing Dolly the manufacturers, Kimmerle Bros., San Francisco, Cal., place stress on its design, reliability and durability.

The patented features of design are the two points of suspension and three swivels directly over the axle. The swivels are so placed that they can be easily adjusted to meet every contingency.

The differential housing lays snugly in the bolster when it is used under the rear



How the Kimkin Towing Dolly is Employed

axle, thus obviating the necessity for a clamp, while when placed under the front axle the 36-in. tread will not allow the car being supported to slide far enough either way to throw it off balance. With this dolly one man can handle the job. Its reliability is assured by the use of castings of a heat-treated metal, and the annular ball bearing equipped wheels, which also have a heavy felt washer and a cast brass hub cap. It is mentioned that these wheels, when assembled, are dirt and dust-proof, and that they will hold lubricant for many months. Net weight, 275 lb. Maximum capacity, 20 ton. Price, $150, f.o.b. San Francisco.

Special Jack for Large Pneumatics

Extensive use of large pneumatics on heavy trucks necessitates the use of a low standing substantial jack with an extremely high raise. To fulfill this need the engineering department of the Buckeye Jack Mfg. Co., Alliance, Ohio, has designed such a tool. It is known as the Buckeye No. TT5, and is featured by its ease of operation, weight and strength as well as high raising ability.

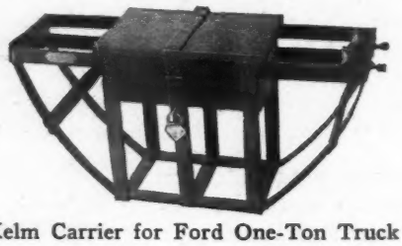
It is cylindrical in form, which construction is claimed to give greater strength than jacks built of angular proportions. The jack is raised and lowered by action of a combination of screws. The screws are propelled by a stub tooth gear and pinion. The entire weight of the load is carried upon a large ball-bearing which lays in a substantial bearing plate. The manufacturer points out that there are no small working parts or locks to become broken or jammed. Briefly, this jack is said to combine strength with lightness of weight.

The use of the long handle in this jack of heavy capacity has been abolished for a quick and easy operating ratchet and bar handle construction similar to that used on the Buckeye Railroad Journal Jack. This construction is said to eliminate needless movement and effort on the part of the repairman working under a car.

Kelm Carrier for Trucks

Kelm & Burbach, Milwaukee, Wis., is marketing a tire carrier for Ford one-ton trucks known as the Kelm Twin Tire Carrier. It provides in one unit, a safe carrying receptacle for two extra tires, and a removable tool box. Both tires and tool box are safely locked against theft by a heavy steel bar.

The framework of the carrier is made from 3-16 x ⅛ in. fabricated rolled steel.



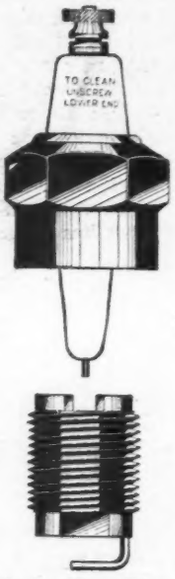
Kelm Carrier for Ford One-Ton Truck

All components are riveted together with ¼ in. rivets.

This carrier is described as possessing ten important features. They are as follows: Fastens to the left running board and is braced against the truck frame; carries one 32 x 4½ and one 30 x 3½ tire; fits any Ford truck chassis, either cab or roadster body; has an all-metal tool box with double cover; one bar locks both tires and tool box; tool box removable for taking out tires; tool box is in handy place, can be opened without removing tires, and can be lifted out and carried where tools are wanted; thumb screw adjustment prevents tires from rubbing and rattling; guaranteed for five years against defective parts. Price complete with padlock, $15, f.o.b. Milwaukee.

Meaker Two-Piece Spark Plug

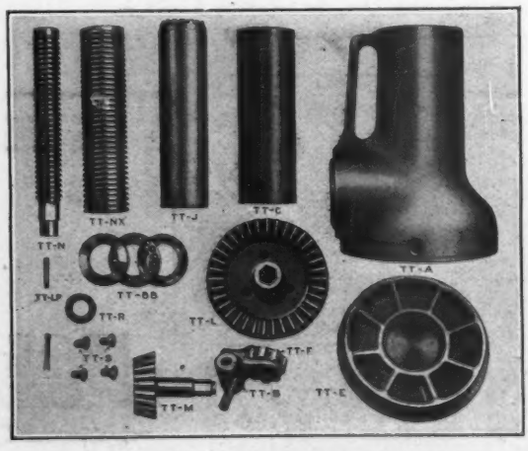
Gas tight construction, a heavy porcelain, and accessibility for cleaning are the chief characteristics of the Meaker Improved Two-Piece Standard spark plug manufactured by the Meaker Spark Plug Co., Detroit, Mich.



Meaker Two-Piece Spark Plug

The extra heavy "775" Frenchtown porcelain used in this plug is permanently sealed into the steel body, and by simply unscrewing the threaded nose piece from the body, the tip of the porcelain can be readily cleaned. The nose piece is copper plated to prevent sticking or rusting into the cylinder head.

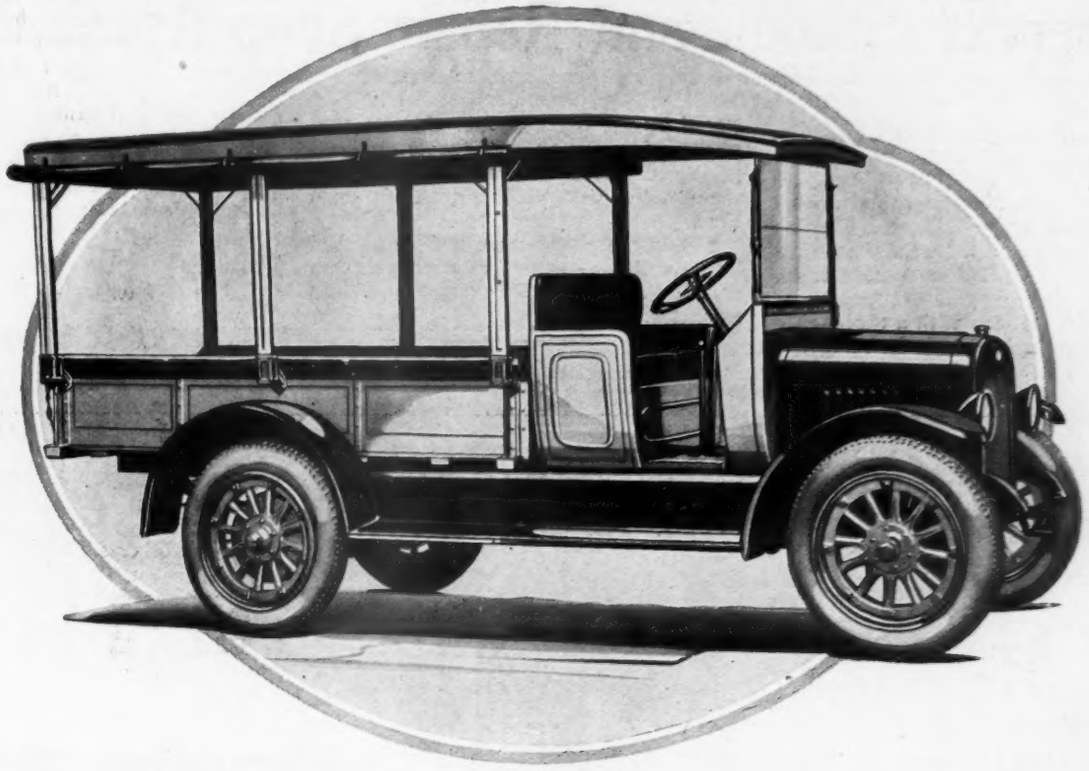
Reassembling of the plug requires no adjustments, and cannot result in injury as the porcelain or packing is not disturbed. This plug is manufactured in all the standard sizes required by the different makes of engines. List price, $1.



Disassembled and Assembled Views of the New Buckeye Truck Jack

New Maxi-Mile Cord

This new 30 x 3½ Maxi-Mile Cord, clincher type was recently announced by the Mason Tire & Rubber Co., Kent, Ohio. It sells at $11.80. It is full cord construction and is airbag-cured. It is about three per cent oversize and of large cross section. This tire has the same non-skid tread as the Mason Heavy-Duty cord, also the distinguishing green stripe.



The Surprise Truck That Is Astounding Dealers

Motor truck dealers were amazed when the Ruggles Truck was first announced. Never had they been offered such value.

Unusual service records have made Ruggles Trucks the biggest surprise in the truck industry. They have stood up through every kind of hard going—made good on every job. Of all the Ruggles Trucks sold in the last year, every one has done even better than the factory claim.

Isn't that the kind of truck *you* want to sell? Quality is right, price is right, selling plan is right. A selling franchise of high value, backed by a financially sound company, is offered in all territory that is still open. Write now—while this big opportunity is still before you.

RUGGLES MOTOR TRUCK COMPANY, Saginaw, Mich.
Canadian Factory: Ruggles Motor Truck Co., Ltd., London, Ont.

RUGGLES MOTOR TRUCK CO. RUGGLES SAGINAW, MICH. U.S.A.

This emblem stands for quality

Model 20
Capacity, 500 - 2500 Lbs.
(Chassis)
$1195

Model 40
Capacity, 2000 - 5000 Lbs.
(Chassis)
$1795

All Prices f. o. b. Factory

The World's Greatest Truck Value

RUGGLES

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Service Station and Repair Shop Appliances

Snap-on Interchangeable Socket Wrench Set

The Snap-on Interchangeable Socket Wrench Set manufactured by the Snap-on Wrench Co., Inc., 10 S. La Salle St., Chicago, Ill., is the final development of an outfit designed to provide car owners as well as service stations with a thoroughly practical and complete outfit for removing even the most inaccessible nuts on all cars.

Snap-on International Socket Wrenches

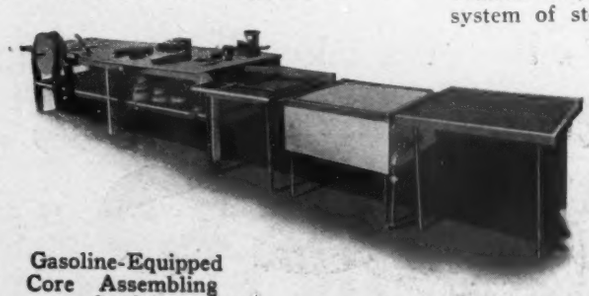
Any socket fits any handle, and either the universal joint or ratchet may be used in conjunction with any handle or any socket. Mounted on the display board, shown herewith, are six different style handles, a universal joint, a ratchet and ten sockets. This sales promoter, which is supplied to dealers, provides an effective and convincing display to the prospective customer.

Price range per set is from $5 to $15.25, according to the car on which it is to be used.

Radiator Core Assembling Outfit

The gas or gasoline-equipped core assembling outfit offered by the International Radiator Co., Inc., Ottumwa, Iowa, is made to produce a good, correctly designed core at a minimum cost. With it any size or shape of automotive radiator can be recorded with dispatch, and it is stated by the manufacturer that its simplicity of operation will enable an inexperienced person to become proficient in the work of core making within a short time.

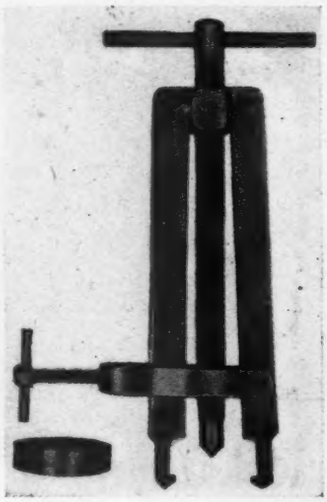
The international core is distinguished by its width of water passages, neatness and design of air cells, and high cooling efficiency.



Gasoline-Equipped Core Assembling Outfit

Campbell Annular Bearing Puller

The Campbell Auto Works, 232 N. El Dorado St., Stockton, Cal., states that its annular bearing puller will simplify the removal of bearings on electrical automobile generators. The tool has a positive clamping device which enables it to be securely clamped on the bearing without slipping off. The jaws are made sufficiently small on the end to allow for its use on the type of armatures which have the windings projecting out over bearings. It is highly finished in nickel.



Close-up of the Campbell Annular Bearing Puller

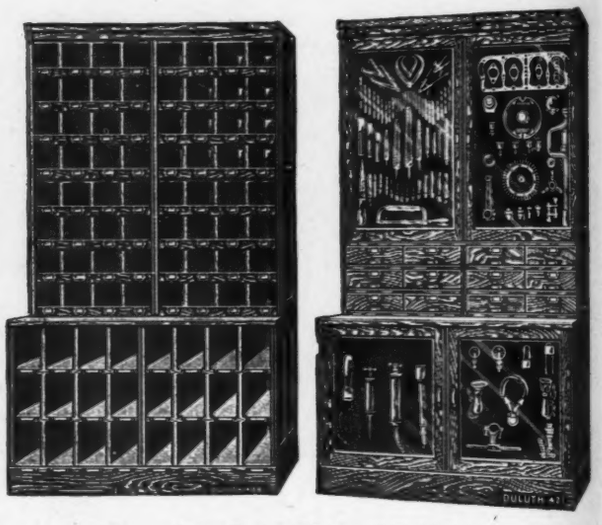
Duluth Show Cases, Cabinets and Shelves

The Duluth Show Case Co., 50th & Wadina Sts., Duluth, Minn., is offering a system of store equipment, designed to meet the demands of modern merchandising needs and to help the merchant solve his problems of better store arrangement.

It combines effective methods of display with systematic storage facilities. The accompanying illustrations present only a few items of the complete "Duluth" line, which is a system of interchangeable display cabinets, shelving and drawer cabinets, display bases, shelving and drawer bases, and display floor cases—all of which are used for the effective display and storage of automobile accessories, electrical goods, hardware, and similar lines.

The glass paneled case shown is the "Duluth" No. 421 combination, which is made up in three sections and a top, or cornice. The merchant can start with one section like that shown and add to it as the conditions of his business necessitate.

The "Duluth" No. 438 combination can be set alongside of the first, or can be used as a single unit. It is a practical piece of store equipment for the systematic storage of automobile parts, bolts, and many other similar items. The partitions between the bins are removable. Unit sections of drawers can be put together and any combination desired may be built up. The drawers are made of galvanized steel, with oak fronts and hardwood backs.



Two of the Duluth Line of Cabinets

V. H. Cartmell, Tire Pioneer, Dies

Van Henry Cartmell, former president of the Kelly Springfield Tire Co., and one of the "Old Guard" in the history of the automobile tire manufacturing, passed away at his home in Springfield, O., August 23, after a severe illness.

Mr. Cartmell founded the Springfield Rubber Tire Co., which firm was later merged with the Consolidated Rubber Tire Co. He became its president in 1903. At one time he served as vice-president of the Rubber Association of America.

In 1920 he resigned as president of the Kelly Springfield Tire Co., and retired from actual business. During his lifetime Mr. Cartmell won a host of friends and his death marks the passing of one of the rubber pioneers who battled for the advancement of the industry in its infancy. He was 73 years old.

What is Your Idea of a Good Truck Wheel

A WHEEL so good that it would constitute a positive selling and service asset to any truck—

What special features ought it to possess?

Unusual strength? Resiliency? Light weight? Simple construction? Attractive appearance?

Write your own specifications! Then check them up, point by point, with the Bethlehem Rolled Steel Truck Wheel.

The rugged strength and durability of Bethlehem Wheels means that you can put them under a truck—and forget them.

The resiliency of Bethlehem Wheels, combined with their light weight, resulting in reduced unsprung weight, means lessened wear and tear on every part of the truck, and consequent savings in repair bills.

And the clean-cut, distinctive appearance of Bethlehem Wheels makes them an addition to the good looks of any truck.

Investigate fully the Bethlehem Wheel. See how closely it approaches your idea of what a really good truck wheel ought to be—how well it qualifies for service on your trucks!

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Sales Offices in the Following Cities:

New York Boston Philadelphia Baltimore Washington Pittsburgh Detroit
Atlanta Cleveland Chicago St. Louis San Francisco

BETHLEHEM
ROLLED STEEL TRUCK WHEELS

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Pavesi Truck-Tractor to be Placed on American Market

THE Pavesi, an Italian four-wheel-drive truck-tractor, originally developed for war purposes, such as carrying ammunitions and hauling field guns over any kind of cross-country, roads and fields, is being redesigned to meet American requirements by A. M. Leoni, a prominent engineer, who has been instrumental in placing various foreign products on the American market. The ability of the truck-tractor to travel at a comparatively fast rate of speed combined with its ample body space explains the assertion that this machine was superior to the tank type tractors, also used in the war for similar purposes. The war machine equipped with tractor wheels had a speed of 10 kilometers an hour and a capacity of two and a half tons, while a similar type, built for domestic purposes and equipped with solid rubber tires has a speed of 16 kilometers an hour. One of the most pronounced features is the freedom with which the two axles tilt on independent planes, thus permitting all four wheels to secure good traction, no matter how uneven and irregular the ground.

The characteristics of this truck-tractor besides the four-wheel-drive feature are: The split-frame, the tilting axles and the steering arrangement which, together with the use of four driving wheels of equal diameter, eliminates the third differential. In fact, both axles steer at the same angle and the third differential is not needed.

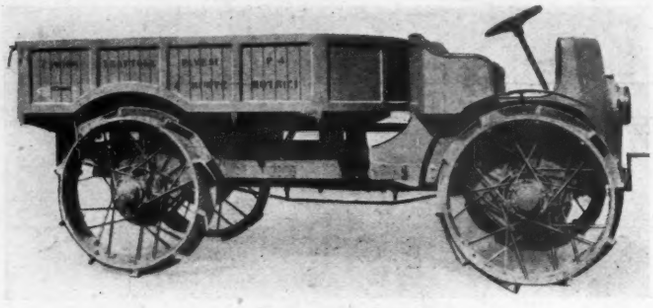
The engine, which is capable of developing 25 hp., is of the two cylinder type, with a bore and stroke of 5⅛ x 7⅛ in. It is governed at 900 r.p.m.

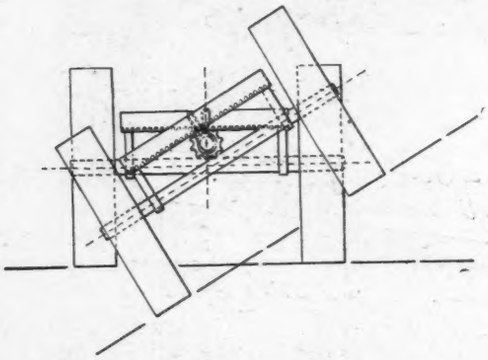
The total weight of this tractor, body included, is 7000 lb. and besides carrying fully 5000 lb., it is capable of hauling from 8 to 10 tons over any kind of ground or road.

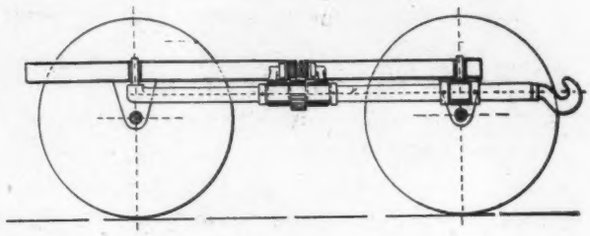
Two speeds are provided, ranging from a minimum of two miles to a maximum of ten miles. It can steer within a radius of 14 ft. with considerable ease, due to the fact that both axles concur in the steering, which construction also permits a high gear reduction.

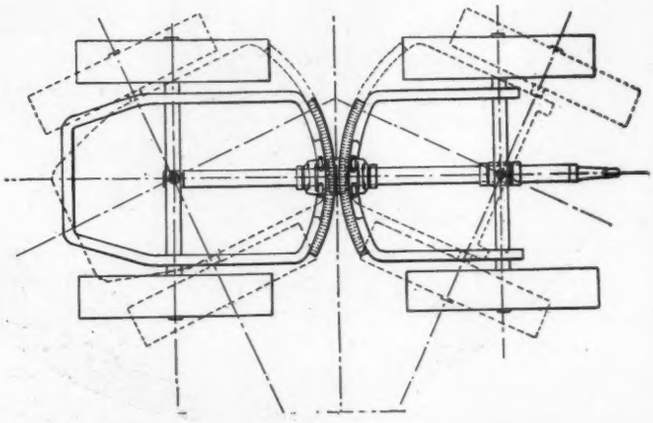
This truck-tractor can be compared to a universal joint. Ten manufacturers can produce ten different types of joints, but they will be alike in principle. In the Pavesi machine, the principle is novel. Diagrammatically, it is represented by two axles, each integrally connected with its respective section of frame, the frame being made in two sections, which are capable of swiveling, with respect to each other, on opposite planes. Both frame sections can be made to obey at the same time by a combined steering gear. The steering gear is attached to tubular subframe, on which sectional frames pivot.

Parallel to the tubular subframe is the universal joint that transmits the power from the front axle group to the rear axle group. This universal joint is built in such a way that it can take care of a strong angularity, the maximum steering angularity. Those interested in this tractor can obtain further information by addressing A. M. Leoni, The Geneva Apartments, 127 S. 16th St., Philadelphia, Pa.









Above: Pavesi Truck-Tractor as Used on Italian Frontier in the World War.

These Diagrammatic Sketches Show Principle and Design of Flexibility.

Negotiation Over Uncultivated Fields Demands More Than a Flexible Frame

New Atterbury Truck Models Announced

The Atterbury Motor Car Co., of Buffalo, is announcing two new models of 2½–3 and 3½–4 tons capacity. These two new models follow the 1½ and 5 ton models which have been in production for some time.

The specifications give several important changes all of which are standard equipment. Among these are found: Latest type K4 and L4 Continental motors with pressure feed lubrication and removable cylinder heads; Delco lighting equipment with generator; semi-enclosed all-steel cabs with doors; built-in glass windshields; left-hand drive and center control; amidship transmissions, 4 speeds forward, 1 reverse; longer wheelbases; lower transmission gear ratios; new type hoods with removable side panels; polished aluminum radiators; combination radiator guards and bumpers; Alemite chassis lubrication systems; vacuum gasoline feed systems.

ROSS STEERING GEARS

for
MOTOR TRUCKS
PASSENGER CARS
MOTOR BUSES
FIRE TRUCKS
and
TRACTORS

As manufacturer, owner or driver of a motor truck, it is significant to you that, according to our present active sales record

187 motor truck manufacturers are now using Ross Steering Gears as standard equipment; while, checking with the complete list of manufacturers as given in the Commercial Car Journal for June 15, 1922, we find only

67 motor truck manufacturers listed who are not using Ross Steering Gears, this number including many who manufacture their own steering equipment.

Since Ross Steering Gears are not ***cheap*** gears, this predominance is evidently due entirely to the quality of the gear itself and the superior service that it gives in easy steering, safety and reliability.

Ross Passenger Car Gears

Ross Steering Gears are now available also for passenger cars, offering the same easy steering, safety and reliability which have won predominance in the motor truck field.

ROSS GEAR & TOOL COMPANY
760 Heath St. Lafayette, Indiana, U.S.A.

Write for further information regarding Ross Steering Gears for motor trucks, passenger cars, motor buses, fire trucks or tractors.

The Steering Gears that Predominate on Motor Trucks

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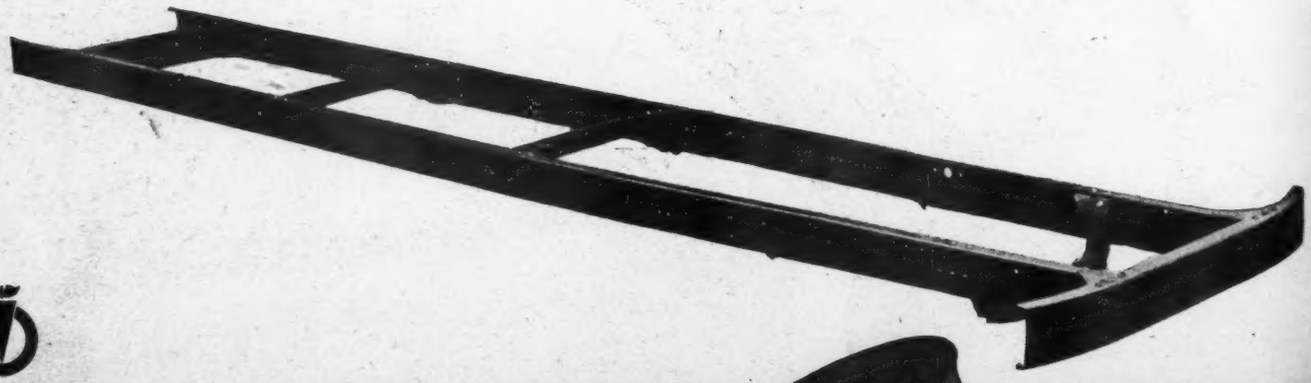
PARISH & PRESSED STEEL FRAMES

Axle Housings
Brake Drums
Step Hangers
Torque Arms
Engine Pans
Axle Housing Covers
Running-Boards



PRESSED STEEL

Parish & Bingham Corp

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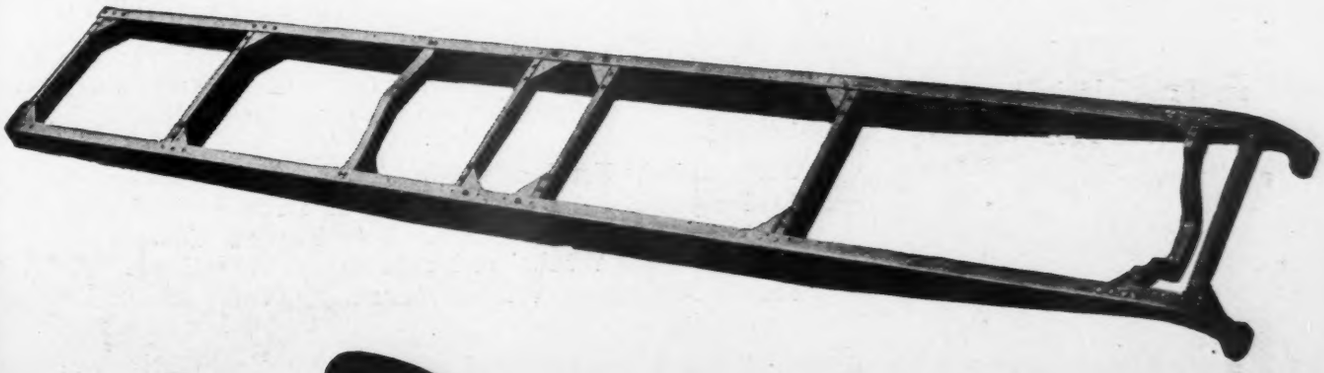
BINGHAM

for

PASSENGER CARS
TRUCKS
and TRACTORS



FRAMES

Cleveland Ohio, U.S.A.

Cleveland

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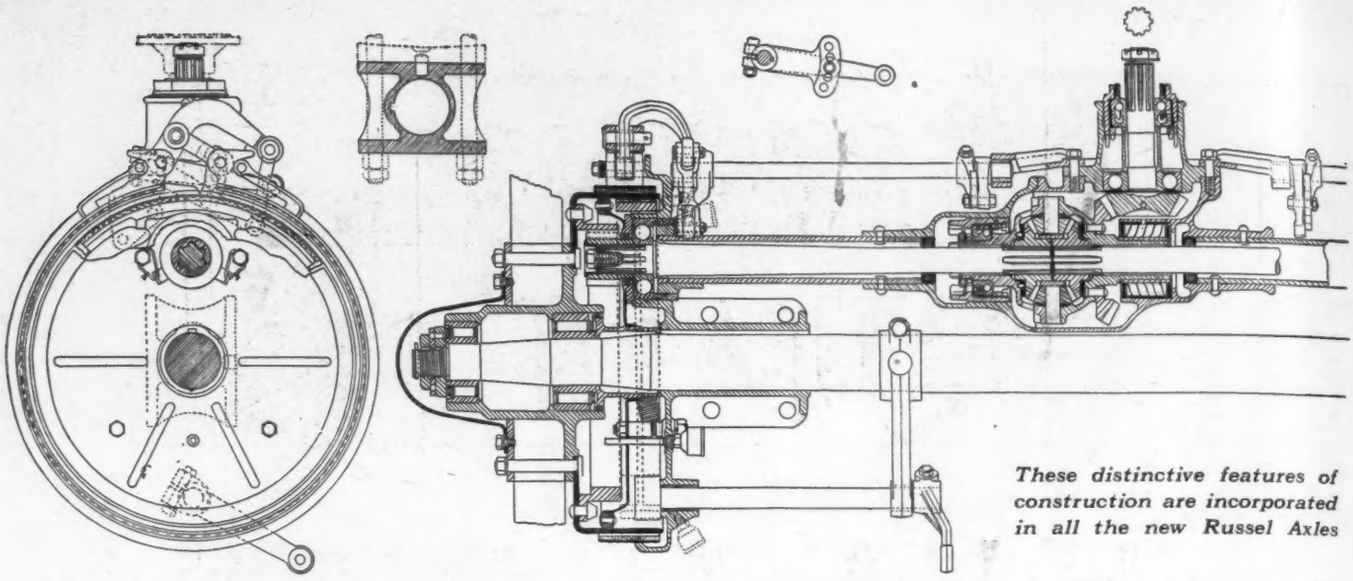

These distinctive features of construction are incorporated in all the new Russel Axles

More Tooth Contact

Teeth Breakage Practically Eliminated in New Russel Truck Axles

4 New Models for 1—1½—2—2¾ Ton Trucks

3 New Bevel Drives: ¾—1—1¼ Ton for Speed Trucks

Only in the new Russel Internal-Drive Axles will be found the superior spiral bevel drive—which provides more tooth contact.

Increased tooth contact means:

1st—Less Strain on Each Tooth
2d —Positive Quietness in Operation
3d —Practical Elimination of Teeth Breakage

The alert truck maker, who embodies the new Russel Axle in his assembly, can further point with pride to these quality Russel refinements:

Completely Enclosed Wheel Gears
An Improved 4 Pinion Type of Differential
Jackshaft Pinion, Mounted to Permit Quick Removal Without Disturbing Jackshaft
Easily Adjusted Wheel Bearing, Made Extra Long

Tell your secretary to send for the complete specifications of the new Russel Axles.

Russel Motor Axle Co.
Detroit, Mich.

INTERNAL and BEVEL DRIVE
Russel Truck Axles

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

This is a useful type of delivery body, built of VEHISOTE panels, by the Hoover Body Co., of York, Pa.

TRADE VEHISOTE MARK

(*Wood-Fibre*) *PANELS*

are the most economical

ONE firm, on being asked their opinion of the merits of Vehisote, said: "We have been constant users of Vehisote for paneling our auto-delivery bodies for several years, and have found it to be the most economical material we have used for this purpose."

This firm operates 110 trucks in Manhattan alone. They sell a high-grade product, popular from coast to coast, and are widely known and admired for their clean-cut, successful business methods.

A firm which operates 110 trucks has proved the law of averages. Their unqualified indorsement is of value to the man who can only operate one delivery car, but wants that one to be right.

Jobbers:
The Scovel Iron Store Co.
San Francisco, Cal.
Los Angeles, Cal.

Waterhouse & Lester
San Francisco, Cal.
Los Angeles, Cal.
Portland, Ore.

E. C. Kadow & Co.
Chicago, Ill.

Mossman-Yarnelle Co.
Fort Wayne, Ind.

Wm. Stockhoff
Louisville, Ky.

A. M. Wood Co.
Charlestown District
Boston, Mass.

Minneapolis Iron Store Co.
Minneapolis, Minn.

Nicols, Dean & Gregg
St. Paul, Minn.

The Faeth Company
Kansas City, Mo.

Sligo Iron Store Co.
St. Louis, Mo.

Jobbers:
W. T. Crane Carriage
Hardware Co.
Newark, N. J.

Chas. Shick & Co.
Trenton, N. J.

N. Langler & Sons
Brooklyn, N. Y.

C. H. Tiebout & Sons
Brooklyn, N. Y.

H. D. Taylor & Co.
Buffalo, N. Y.

H. Hett & Sons
New York, N. Y.

W. E. Kleine & Co.
New York, N. Y.

The G. B. Schulte Sons Co.
Cincinnati, Ohio

Gerhab & Ludlam
Philadelphia, Pa.

Jacob Gerhab
Philadelphia, Pa.

Shadbolt & Boyd Iron Co.
Milwaukee, Wis.

THE PANTASOTE COMPANY

CHICAGO
Peoples Gas Bldg.

NEW YORK
11 Broadway

DETROIT
1446 Penobscot Bldg.

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Carpenter HI-CROWN solid truck tires

CARPENTER HI-CROWNS are money makers, because they give a distinct service which creates satisfied customers.

Built by a conservative organization of highly skilled workmen who take pride in the perfection of every tire they build.

The design, curing and compounding are all the work of expert hands. The chief object being to build into Carpenter Hi-Crowns: unusual service—a little more than the guaranteed mileage—BETTER SOLIDS.

Some of the outstanding features of Carpenter Hi-Crown Solid Truck Tires are: better profile design, better rubber compound, exact control of curing process, and skilled workmanship.

Dealers and distributors who really want to make their solid-tire contract a profitable one, should write for the Carpenter proposition.

"We can't make solids so they won't wear out, but we can make them so they won't give trouble."

Carpenter Tire & Rubber Co., Inc.
Hempstead, Long Island
New York

better solids

guaranteed 10,000 miles

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Pioneer Since 1901

GRAMM PIONEER MOTOR TRUCK LIMA, OHIO, U.S.A.

"The Recognized Standard of Quality"

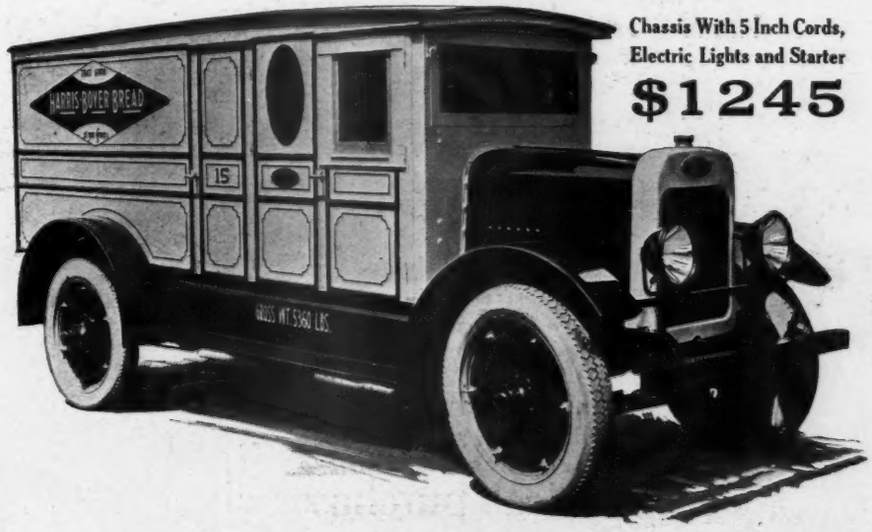
"Pure Blood Will Tell"

Among competitors and users alike, when facts are stated, Gramm-Pioneer motor trucks are "The Recognized Standard of Quality" by which all others are now rated.

It is only natural that this should be so among those who are really competent to judge.

While over twenty years of exclusive truck manufacture (the oldest in the industry) has shown us the scores of places where we could cheapen our product without liability of immediate buyer detection, it has also taught that lowest ton-mile costs for operation and upkeep with continuous daily service and a high annual inventory or resale value *over* not two to five, but *eight to ten years*, can only be had by the use of highest-grade engineering units, workmanship, inspection and test.

There can be no substitute for real quality; except at the expense of the user and the dealer who sold him.



Chassis With 5 Inch Cords, Electric Lights and Starter

$1245

Gramm-Pioneer Speed Truck With Special Bakers' Body
One of a Fleet Operating Out of Johnstown, Pa.

Dealers in unallotted territory capable of rendering high-class sales and service representation, and who are seeking to share in the big truck business of the future should inquire now regarding our attractive sales proposition.

We have a complete line from 1 to 6 ton, each one "truck engineered" and free from short cuts or converted passenger car units, and can furnish also every character of body and well proven auxiliary device.

Each size is popularly priced. Write today for direct-from-factory, money-making proposition.

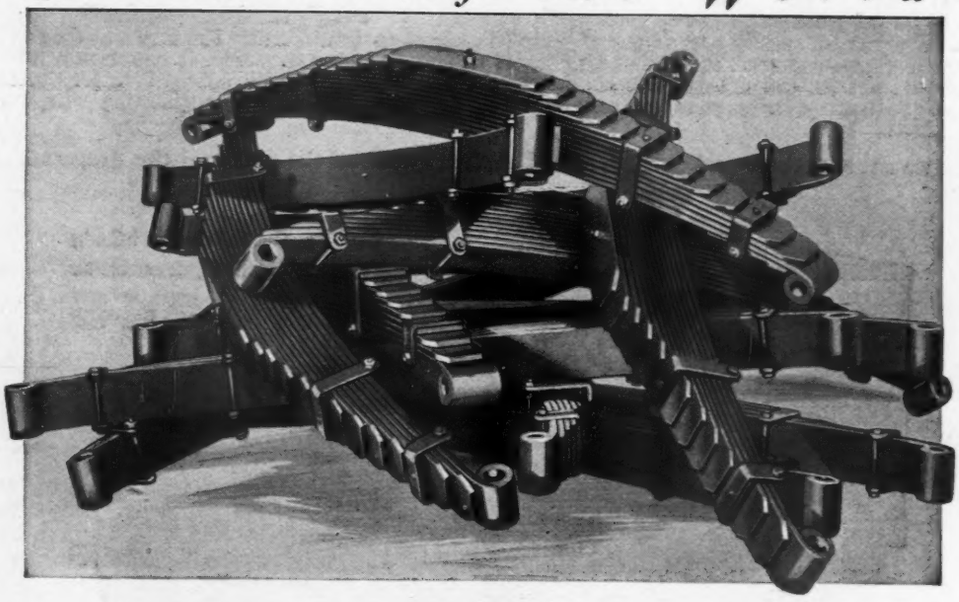
There are 212 places in a Gramm-Pioneer heavy-duty truck that are fastened with castellated nuts and cotter pins in place of the cheaper plain nut and lock washer.

The Gramm-Bernstein Motor Truck Company

Lima, Ohio, U. S. A.

MATHER SPRINGS

Standard of the World



Quality is always the most economical purchase when value is measured by service instead of price.

Genuine Made Only By

The MATHER SPRING CO.

TOLEDO, OHIO, U.S.A.

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BESSEMER MOTOR TRUCKS

Have a Power Transmission Efficiency of 97%

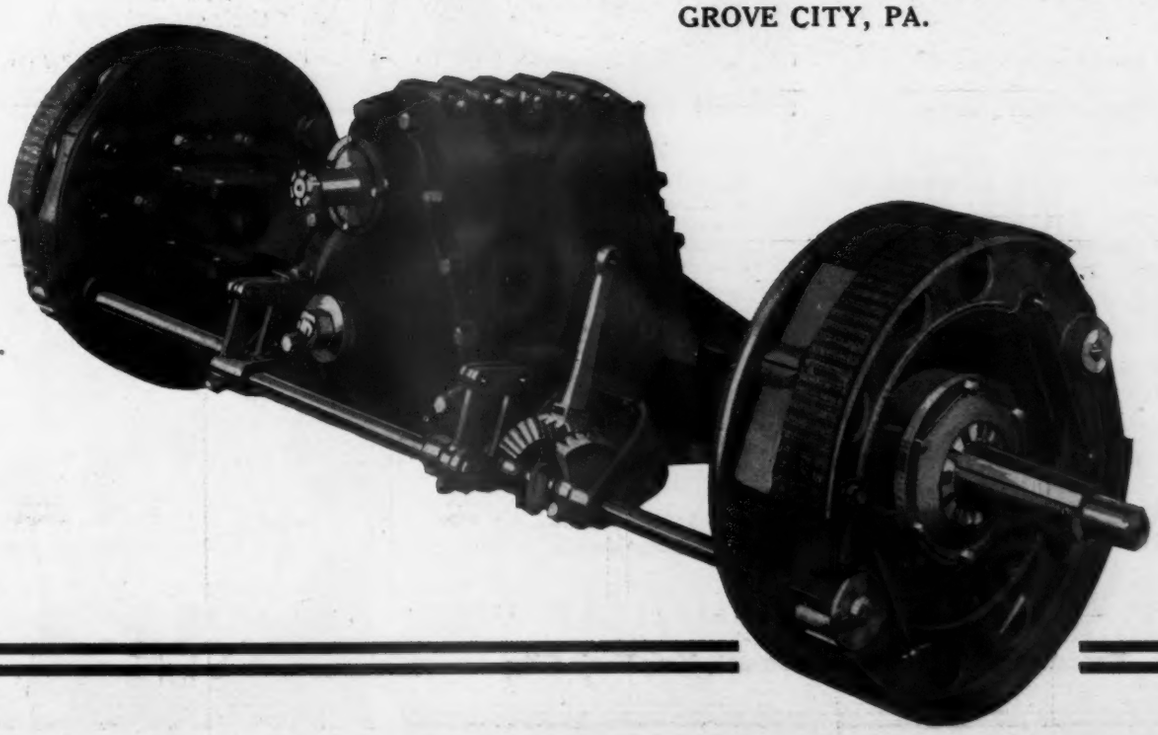
That is a powerful selling asset. When you can furnish your customers with such a high degree of power transmission, you have automatically eliminated competition.

The famous L. M. Tandem-Duplex Drive, that is now standard equipment on all Bessemer Motor Trucks, supplies this mechanical efficiency that so greatly lowers costs; secures greater power and sets a new economy and mileage standard.

Bessemer Motor Trucks are easily sold, because with this wonderful Tandem Drive, delivering 97% of the power to the rear wheels, fuel consumption is lowered; gear wear is minimized; noise is eliminated, and unsprung weight is materially lessened.

The Tandem-Drive is only one of many exceptional selling features that have enabled Bessemer dealers to maintain a high sales average at all times. Ask us to tell you fully about the other features and the *unusual dealer contract that we have to offer men who measure up to Bessemer standards.*

BESSEMER MOTOR TRUCK COMPANY
GROVE CITY, PA.



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HERE'S THE WAY TO SELL

SCHMIDT

HOOK ON OR OFF AT WILL

Anchored—Semi-Anchored—Full Floating

TRACTION DEVICES

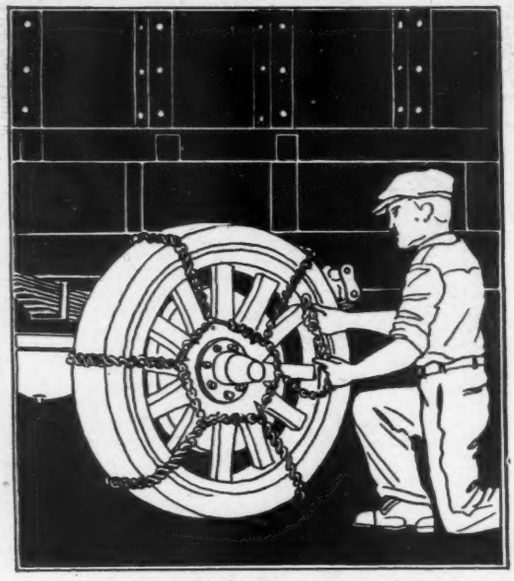
PUT a unit on your prospect's truck. Don't merely explain how they work. Show him by application to one of his own truck wheels why they are the outstanding traction devices on the market. Demonstrate to the truck driver or truck owner how easy they are to operate and that they can be adapted to three positions of wear, which makes them last three times as long as ordinary chains and twice as long as those that can only be reversed. Show them how worn parts can be shifted from tread position to the unit ends and replaced by other unworn sections.

This is the season when your sales of traction devices should be large. Cash in on the unusual patented features of the Schmidt devices. You can increase your sale of traction devices and indirectly the rest of your winter accessory equipment by leaps and bounds if you will take the trouble to actually demonstrate these superior units.

Point out to prospective buyers how it's impossible for them to cut tires. There's an objection to ordinary chains that it's well to anticipate and overcome. Show them how they can't be fastened tight enough to cut the tread. Nor can they pull the spokes, as the strain is equalized thru the chain being snubbed against the steel rim. Call their attention to the positive locking device which is self-adjusting and point out how it's impossible to lose them, for if one loop breaks, the other holds.

ANCHORED POSITION

It only takes a few seconds or minutes, varying with the degree of your familiarity with them, to put them on. First show your customer this anchored position.



If you will exercise some real old-fashioned salesmanship with these out-of-the-ordinary devices to arouse your enthusiasm, the results will amaze you.

Traction devices are needed. These are unquestionably superior to any others made. Clean up!

DISTRIBUTORS

C. J. EDWARDS CO.
2004 St. Clair Ave., Cleveland, Ohio

WALTER H. WILLIAMS
175 Massachusetts Avenue, Boston, Mass.

LANPHEAR MOTOR CAR CO.
17 Snow Street, Providence, R. I.

BALDWIN SERVICE CO.
262 Oak Street, Buffalo, N. Y.

BALDWIN SERVICE CO.
135 High Street, W., Detroit, Mich.

SEMI-ANCHORED

Second—show them how easy it is to alter the unit from the anchored position to semi-anchored. Your ease of handling them impresses prospects.

FULL-FLOATING

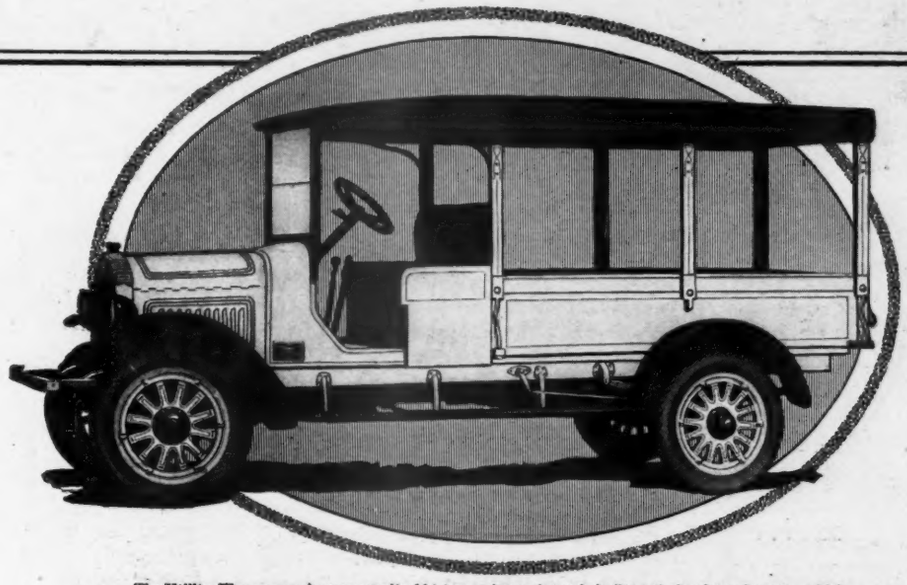
Then complete the demonstration by forming them into a full-floating unit, which is particularly adapted to disc wheels.

Write for Full Particulars and the Name and Location of Nearest Jobber to

CHARLES D. SCHMIDT CO., Inc.

Broadway, Corner Canal Street, New York City

STEWART
Motor Trucks



The Utility Wagon, maximum capacity 1¼ ton. A speed truck built entirely of truck parts, which offers greatest value in its field. Chassis price $1245 f. o. b. Buffalo. Bodies suitable for all truck needs.

It's a Big Stewart Year

And these advantages mean more profits for dealers

Stewart design eliminates 600 useless parts, and produces a stronger, simpler and more reliable truck.

That advantage is not only valued by owners, but it relieves Stewart distributors and dealers of the need for carrying a burdensome stock of parts. Their profits are not absorbed by "free service" on a multitude of adjustments.

Stewart dealers, too, sell a price advantage of $200 to $600 less than average trucks, which gives them a decisive factor in competition.

The first Stewarts, built ten years ago, are still giving economical, efficient service. The satisfaction of owners is reflected, not only in the remarkable way Stewart fleets grow from 1 to 30, 40 and 50, but also in the way small operators repeat their purchases.

Some desirable territories are open for dealers of Stewart caliber. See your nearest distributor or write the factory.

Stewart Motor Corporation
Buffalo, N. Y.

2½ to 3 ton—with special tank. Compare this quality product with any like priced job. Note its superior quality. Chassis price $2390 f. o. b. Buffalo

1½ to 2 ton. Equipped with special ice cream haulage body. Costs from $385 to $1910 less than comparable trucks. Chassis price $1790 f. o. b. Buffalo

3½ to 4 ton. Equipped with dump body. An ideal job for the coal trade. Has a price advantage over trucks of equal quality. Chassis price $3196 f. o. b. Buffalo

1¼ to 1½ ton. Equipped with a stake body offers quality found in trucks costing much more. Chassis price $1445 f. o. b. Buffalo

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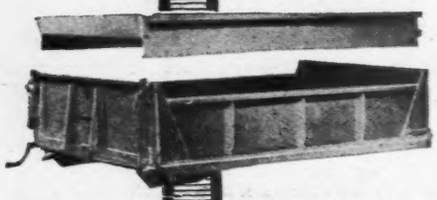
Quality TANKS BODIES & HOISTS "Made by Heil"

HEIL BODIES & HOISTS

Quality TANKS BODIES & HOISTS "Made by Heil"

2 in 1 Combination Body. The double-acting tail gate now standard on all Heil Bodies is in lowered position. The sides are removed so that lumber, beams, pipe, cement, etc., can be hauled to advantage.



4 in 1 Combination Body showing the front, rear and upper sides removed. Two sets of sides, coal capacity; one set of sides, gravel capacity.

Combination 4-7 Yard Body and Hydro Hoist. Hoist can be mounted on any make or model of truck. Simple, dependable, efficient, nothing to get out of order.

Tried, Tested and Approved

We Stand Ready to Assist You in the Selection of Equipment Suitable to Your Needs.

Heil Equipment is substantial as well as practical. Bodies are strongly made and properly designed for all kinds of heavy hauling. The Hydro Hoist is a simple, compact and powerful hydraulic hoist designed to fit every truck.

The swinging partitions in the bodies installed on the four trucks shown below—can be installed on any standard steel dump body, old or new. The Hydro Hoist on many models of short wheel base trucks gives a dumping angle of 60 degrees which is sufficient to dump wet or dry mix.

Place your orders with the *Pioneer Dump Body Builders of America* and get the best equipment obtainable.

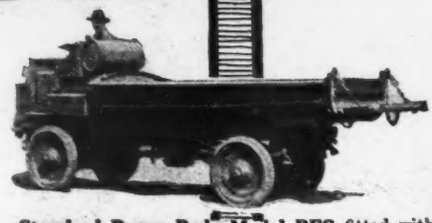
Let us put the Heil catalog on your desk.

THE HEIL CO.

1143 Montana Ave.

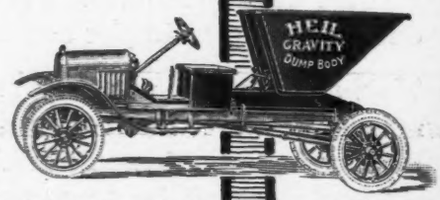
Milwaukee, Wis.

Chicago St. Paul New York
Sioux City, Iowa San Francisco
Cleveland Richmond
Pittsburgh Washington, D. C.



Standard Dump Body Model RFC fitted with Hydro Hoist. Notice that all the loading space back of the cab is utilized for actual load.

The Heil Hand Hoist has been designed for use on light duty trucks. It can handle loads up to 3 tons. The hoist is attached to the chassis frame by pivot brackets which allow the hoist to incline toward the body when raising the load but prevent it from slapping or striking cab or body when truck is moving. The hoist weighs 290 pounds. The price complete with body arms is $125.00.



Gravity Dump Body. Dumping angle 80 degrees. Body is electrically welded to make it water tight. Simple operating mechanism. One yard body complete with U-bolts. Sells for $100.00.

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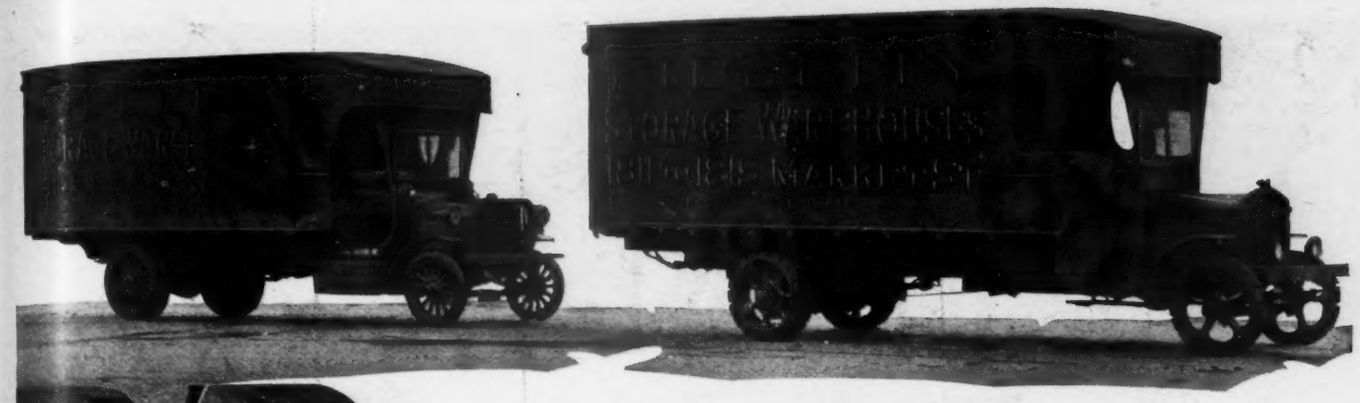

Caterpillars prevent a bad accident

The two trucks pictured above recently had a harrowing experience from which every farsighted truck owner may learn a valuable lesson. This experience is related in the following letter from the Fidelity Storage and Warehouse Company, of Philadelphia, to whom these trucks belong:

> "These trucks were on a trip to Kingston, N. Y., fully loaded, and while going up Bear Mountain, the driver of truck No. 1, a 5 ton Pierce Arrow, which is equipped with a tire other than your own, encountered serious difficulty in pulling the hill, finding it necessary to stop.
>
> "Upon attempting to restart, he found that the truck had sunk a considerable distance in the mud, making it impossible to proceed; every attempt to start caused the wheels to spin, and at each effort the truck would slide backwards until it was about a foot and a half from the edge of the mountain. Further effort to move the truck forward would have caused it to tumble over the side of the mountain.
>
> "The driver of truck No. 3, noticing the peculiar predicament in which the other driver was placed, backed his truck, a 3½ ton Pierce Arrow, equipped with your Caterpillar Tires, and attached a tow line to the other truck. With very little effort he was able to pull this truck out of the mud, not having used any chains, and depending entirely upon the traction which your Caterpillar Tires were able to give."

Lack of traction is costly. It wastes time, power, gas and oil. It is also dangerous. It may cause you a bad accident some time. But there is no need either to put up with the waste or to risk the danger, because you can make your trucks almost traction-perfect by equipping them with Caterpillar Tires.

Caterpillars are made in sizes suitable for trucks of every type and weight

Kelly-Springfield Tire Co.

GENERAL SALES DEPARTMENT

250 West 57th Street NEW YORK, N. Y.

REPUTATION

—an asset in selling a motor truck.
—a warrant of years of low up-keep.
—a certain addition to resale value.
—an assurance of prompt delivery of original parts if you need them.

TIMKEN AXLES

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The Added Attraction

Everywhere you go you will find circuses, theatres—all places of amusement—constantly selling their programs on the strength of "The added attraction."

The added attraction often brings in more business than the principal feature of the show.

What an object lesson for the truck merchant!

Competition is keen. There are many good makes establishing records in the field.

It is time for the truck merchant to consider "The added attraction!" The equipment of the truck more and more is going to determine who gets the sale.

The fact alone that more than 5,000 Columbian Lightning Hand Hoists are in dump-truck service today is ample proof that they have emphatically made good.

But no less successful has been the Columbian All-Welded Steel Dump Body. Think of it—a body consisting of one rivetless unit of steel!

Both sold so reasonably the dealer can quote a rock bottom price on the entire job.

Both backed by a sales campaign carried into the strongest publications of the contracting and coal-dealer fields.

And not a cent of investment!

Write today for details of our proposition.

COLUMBIAN STEEL TANK COMPANY

1407 West Twelfth St., Kansas City, Mo.

COLUMBIA

TANKS FOR THE WORLD

Lightning Hand Hoists

Announcing

A New Series of Atterbury Trucks

With

Latest Type Continental Motors
Pressure Feed Lubrication
Removable Cylinder Heads
Amidship Transmissions
Left-Hand Drive
Electric Lights
Longer Wheelbases
And Many Other Refinements

The new models offer dealers a perfected line that enhances still further the Atterbury reputation for economical performance in the service of owners.

The combination of the proved and perfected Atterbury truck, with the backing of the oldest exclusive manufacturer of motor trucks in the United States, gives dealers an opportunity to establish and build up a permanent and increasing business—the only kind profitable over a term of years.

Send for the details of the Atterbury dealers' plan.

1½, 2½, 3½ and 5 Ton Sizes

ATTERBURY

MOTOR TRUCKS OF MAXIMUM SERVICE

ESTABLISHED 1903

ATTERBURY MOTOR CAR COMPANY

Buffalo, New York

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Through—

Asbestos

and its allied products

JOHNS-MANVILLE
Service in Conservation

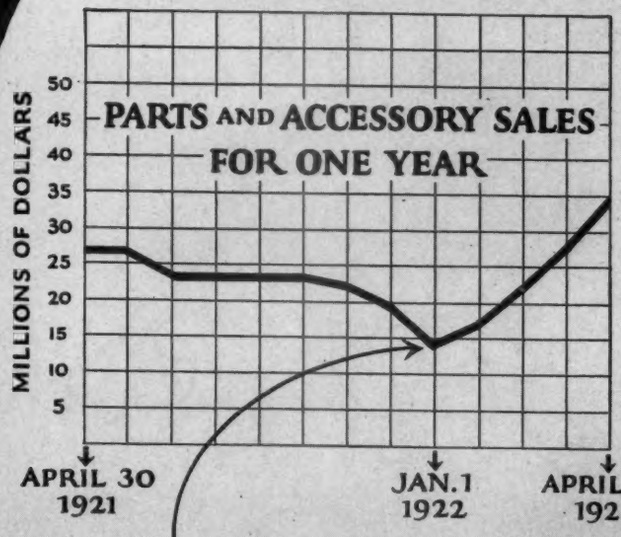
Heat Insulations, High Temperature Cements, Asbestos Roofings, Packings, Brake Linings, Fire Prevention Products

JOHNS-MANVILLE

AUTOMOTIVE EQUIPMENT

ASK 'EM
TO BUY

This chart shows how it pays



here's where they began to ask 'em to buy

See how accessory sales have almost trebled since dealers started *asking 'em to buy!*

It pays!

Ask 'em to buy the products shown on the next two pages. They are easy to sell because they share a name that is highly respected in the automotive field

Ask 'em to reline

That is the way to get the brake lining business. Inspect the brakes, from time to time, of all the cars in your garage and tell the owners the conditions you find.

If it is necessary to reline—recommend it to the car owner.

He will appreciate the care which you have taken. And when you reline tell him that you are using Johns-Manville Non-Burn. He knows through our national advertising that "Brakes are safer and last longer with Non-Burn".

Secure the Non-Burn window display from the distributor near you.

Johns-Manville Speedometer for Ford Cars

Ask 'em to buy this sturdy mileage recorder. It enables Ford owners to tell how far—how fast—how many miles per gallon.

Catalog No. 3020.

Johns-Manville Automotive Jewett Ring Packing

For use wherever a ring of small cross section is required—particularly adapted for water pump shafts. Contains no rubber or rubber substitutes. You can make a tight gland packing in quick time.

Johns-Manville Automotive Seigelite Sheet Packing

—of high tensile strength, when immersed in water it becomes extremely tough; for gasketing water manifolds, differential housings, carburetors, etc.

Johns-Manville Asbestos Friction Clutch Facings

These facings will enable you to give much better service in facing clutches.

You will notice that they are drilled and countersunk for mounting—which means a saving on the repairman's time sheet. They are accurately ground on face and do not have to be worn in.

For your convenience we have placed a stock of Johns-Manville Clutch Facings, for all standard cars requiring disc facings, at a Distributor's near you. (See list on next page.)

You can get as many as you want, as often as you want—quickly.

Johns-Manville Hub Odometer

—an accurate mileage recording device for commercial cars—can be quickly attached. Grease-proof and permanent.

Johns-Manville Automobile Tape

—is guaranteed not to dry out. It stays sticky. Attractive display package.

-Manville
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Packing

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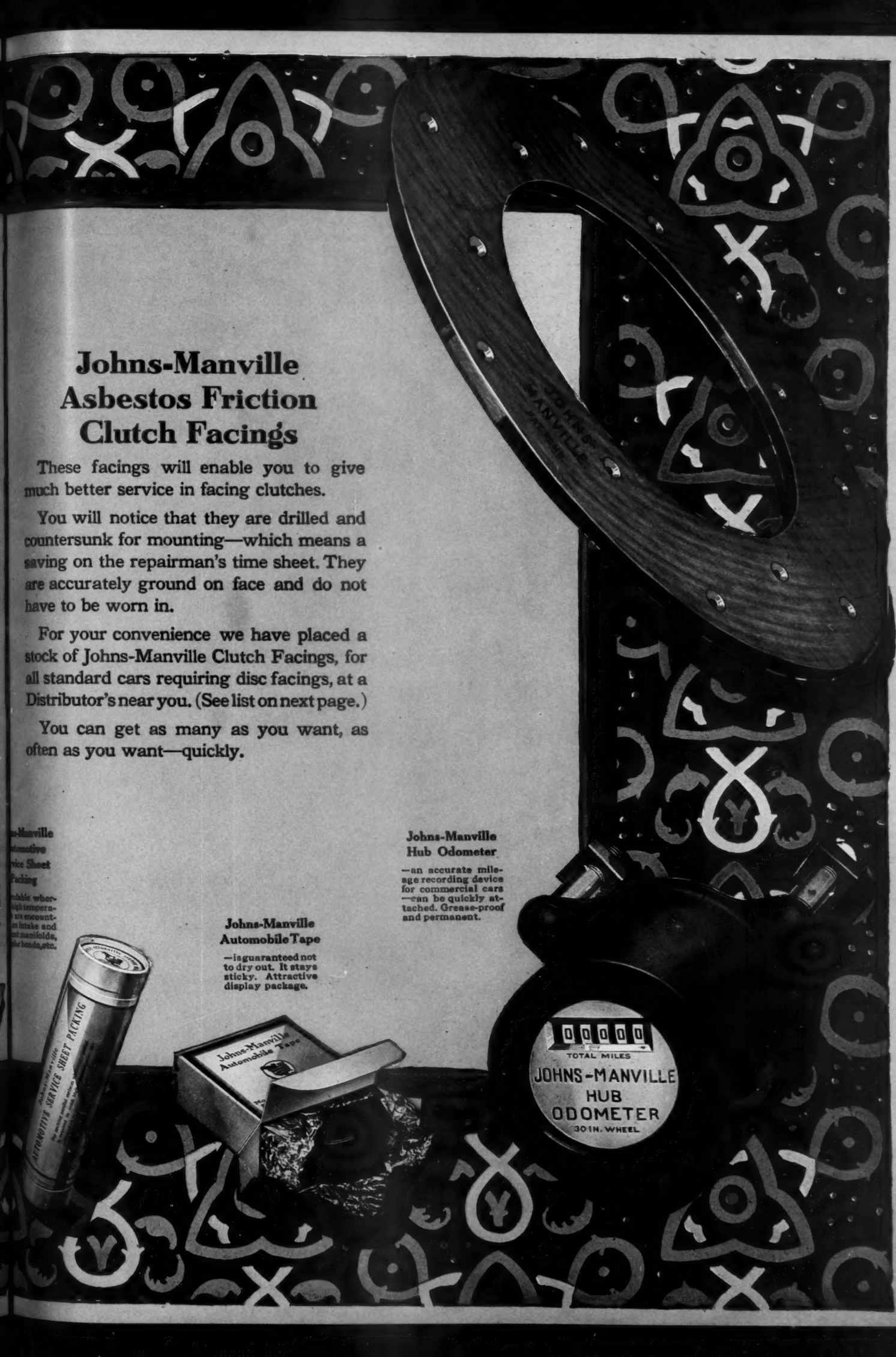
or heads, etc.



CHOOSE YOUR DISTRIBUTOR

Alabama
Moore-Handley Hardware Co., Birmingham
Johnson Tire & Auto Co., Montgomery

Arkansas
Crow-Burlingame Co., Little Rock

California
Chansior & Lyon Co., Fresno
Chansior & Lyon Co., Los Angeles
Featherstone, E. A., Los Angeles
McCoy Motor Supply Co., Los Angeles
Waterhouse & Lester Co., Los Angeles
Weinstock-Nichols Co., Los Angeles
Chansior & Lyon Co., Oakland
Weinstock-Nichols Co., Oakland
Kimball-Upson Co., Sacramento
P. W. Gavin Company, Inc., San Diego
Chansior & Lyon Co., San Francisco
Electric Appliance Company, San Francisco
McCoy Motor Supply Co., San Francisco
Waterhouse & Lester Co., San Francisco
Weinstock-Nichols Co., San Francisco
California Auto Supply Co., Stockton

Colorado
Auto Equipment Co., Denver
Foster Auto Supply Co., Denver
Motor Accessories & Tire Co., Pueblo

Connecticut
Hessel & Hoppen Co., New Haven
Motor Tire Service Co., Putnam

District of Columbia
National Electrical Supply Co.
Rubel, Chas., & Co.

Florida
Baughman Company, G. Norman, Jacksonville
Baughman Company, G. Norman, Miami
Baughman Company, G. Norman, Tampa

Georgia
Alexander-Seewald Co., Atlanta
Osburn-Abston & Co., Atlanta
Cody Co., W. E., Columbus

Illinois
Automobile Supply Co., Chicago
Chicago Automobile Supply House, Chicago
Electric Appliance Company, Chicago
Motor Car Supply Co., Chicago
Sheridan Auto Supply Co., Chicago
Tenk Hardware Co., Quincy
Washington Auto Supply Co., Washington

Indiana
Orr Iron Co., Evansville
Lomont & Co., Ft. Wayne
The Gibson Co., Indianapolis
The I. J. Cooper Rubber Co., Indianapolis
Goodlin Auto Equip. Co., South Bend

Iowa
Cedar Rapids Pump Co., Cedar Rapids
Sieg Co., Davenport
Herring Motor Co., Des Moines
Repass Auto Co Waterloo

Kansas
The Frank Colladay Hardware Co., Hutchinson
Watson-Weldon Co., Salina
Southwick Auto Supply Co., Topeka
Massey Hardware Company, Wichita

Kentucky
Peasley-Gaulbert Co., Louisville

Louisiana
Electric Appliance Company, New Orleans
Shuler Auto Supply Co., New Orleans
Cupples-Lonergan, Inc., Shreveport

Maine
Bigelow & Dowse Co., Bangor
The Farrar-Brown Company, Inc., Portland

Maryland
Auto Supply Co., Baltimore
Coggins & Owens, Baltimore

Massachusetts
Bigelow & Dowse Co., Boston
Linscott Supply Co., Boston
Motor Tire Service Co., Fitchburg
Bigelow & Dowse Co., Springfield
Duncan & Goodell Co., Worcester
Motor Tire Service Co., Worcester

Michigan
Bowman Gould Co., Detroit
Roehm & Davison, Detroit
Tisch Auto Supply Co., Grand Rapids

Minnesota
Kelley-Duluth Co., Duluth
Minneapolis Iron Store Co., Minneapolis
Reinhard Bros. Co., Minneapolis
Williams Hardware Co., Minneapolis
Nicols, Dean & Gregg, St. Paul

Missouri
Joplin Supply Co., Joplin
The Faeth Company, Kansas City
Ayers Farmer Auto Supply Co., St. Joseph
Beck & Corbitt Iron Co., St. Louis
Fred Campbell Auto Supply Co., St. Louis
Geller, Ward & Hasner, St. Louis
Hermann-Sanford Company, Springfield
Joplin Supply Co., Webb City

Montana
Northwestern Auto Supply Co., Billings

Nebraska
Nebraska Buick Auto Co., Lincoln
Western Auto Supply Co., Omaha

Nevada
Nevada Auto Supply Co., Reno

New Hampshire
Thompson & Hoague Company, Concord

New Jersey
Economy Auto Supply Co., Newark
Pruden Hardware Co., Newark

New York
Albany Hardware & Iron Co., Albany
Martin-Evans Co., Brooklyn
H. D. Taylor Co., Buffalo
Barker, Rose & Clinton Co., Elmira
Weaver-Ebling Co., New York City
Pruden Hardware Co., W. E., New York City
Whittemore-Sim Co., Inc., New York City

North Carolina
Carolinas Auto Supply House, Charlotte
Automobile Supply Co., Wilmington

North Dakota
Grant-Dadey Company, Fargo

Ohio
The Penn. Rubber & Supply Co., Akron
C. & D. Auto Supply Co., Cincinnati
The I. J. Cooper Rubber Co., Cincinnati
The Penn. Rubber & Supply Co., Cincinnati
The Penn. Rubber & Supply Co., Cleveland
The I. J. Cooper Rubber Co., Columbus
The Penn. Rubber & Supply Co., Columbus
Justus & Parker Co., Columbus
The I. J. Cooper Rubber Co., Dayton
The Penn. Rubber & Supply Co., Toledo
The Penn. Rubber & Supply Co., Youngstown

Oklahoma
Severin Tire & Supply Co., Oklahoma City
Joplin Supply Co., Tar River
Racine Tire Co., Tulsa
Tulsa Motor Supply Co., Tulsa

Oregon
Wiggins Company, Inc., Portland
Chansior & Lyon Co., Portland
Waterhouse & Lester Co., Portland

Pennsylvania
Motor Accessories Co., Allentown
General Motor Supply Co., Altoona
The Penn. Rubber & Supply Co., Erie
Front Market Motor Supply Co., Harrisburg
General Auto Supply Co., Harrisburg
Johnstown Auto Co., Johnstown
General Auto Supply Co., Lancaster

Pennsylvania—Continued
The Penn. Rubber & Supply Co., Oil City
Berrodin Rubber Co., Philadelphia
Gaul, Derr & Shearer Co., Philadelphia
Roberts Electric Supply Co., H. C., Philadelphia
Dyke Motor Supply Co., Pittsburgh
Jackson Motor Supply Co., Pittsburgh
General Auto Supply Co., York

Rhode Island
Belcher & Loomis Hardware Co., Providence

South Carolina
Franke Co., Inc., C. D., Charleston
D. W. Alderman, Jr., Inc., Florence
D. W. Alderman, Jr., Inc., Greenville

South Dakota
L. & L. Motor Supply Co., Sioux Falls

Tennessee
Southern Auto Supply Co., Chattanooga
The I. J. Cooper Rubber Co., Knoxville
Osburn-Abston & Co., Memphis
Auto Supply Co., Nashville
The I. J. Cooper Rubber Co., Nashville

Texas
Electric Appliance Company, Dallas
Ferris-Dunlap Co., Dallas
Tri-State Accessories Corp., El Paso
The Equipment Company of Texas, Fort Worth
Meyer Co., Jos. F., Houston
The Southern Equipment Co., Houston
The Southern Equipment Co., San Antonio
McCauley-Ward Motor Supply Co., Waco

Utah
Inter-Mountain Electric Co., Salt Lake City
Motor Mercantile Co., Salt Lake City

Virginia
Owens-Merritt, Danville
Piedmont Hardware Co., Danville
Crump Co., Benj. F., Richmond
Talman Auto Supply Co., Richmond
Meadows-Price Co., Roanoke

Washington
Chansior & Lyon Co., Seattle
Reynolds & Reynolds, Seattle
Chansior & Lyon Co., Spokane
Holley-Mason Hardware Co., Spokane
Chansior & Lyon Co., Tacoma
Reynolds & Reynolds, Tacoma

West Virginia
Williams Hardware Co., Clarkesburg

Wisconsin
Clemons Auto Supply Co., Eau Claire
Andrae & Sons Co., Julius, Milwaukee
Shadbolt & Boyd Iron Co., Milwaukee
Tisch Auto Supply Co., Milwaukee
Western Motor Supply Co., Milwaukee

Wyoming
Auto Equipment Co., Casper

CANADA

Alberta
Motor Car Supply Co., Calgary
The Chapin Co., Ltd., Calgary
Wood, Vallance & Adams, Ltd., Calgary
Motor Car Supply Co., Edmonton

British Columbia
Wood, Vallance & Leggat, Ltd., Vancouver

Manitoba
Wood, Vallance, Ltd., Winnipeg

New Brunswick
Lounsbury Company, Ltd., Newcastle

Nova Scotia
J. J. Snooks Ltd., Truroo

Ontario
Whites, Limited, Collingwood
Nicholson Sales & Service Co., Hamilton
A. Chown Company, Kingston
James Cowan, London
Just Motors Limited, Ottawa
Samuel Trees & Company, Toronto
Bowman Anthony Co., Windsor

Saskatchewan
Wood, Vallance, Limited, Regina

JOHNS-MANVILLE Inc., Madison Ave. at 41st St., New York City

Branches in 50 Large Cities

For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto

THE HAYES ALL-METAL CAB CAN BE PURCHASED KNOCKED DOWN, IF DESIRED

BELOW IS THE EIGHTH ASSEMBLY OPERATION

Assemble Windshields in Place

Set the right and left-hand windshields in place with the hinges on and put eight screws through the hinges into the dash.

Equip Your Truck With Hayes Cab

You See

Every Day HAYES MFG. CO. HAYES DETROIT, MICH. **Everywhere**

Sheet Metal Products

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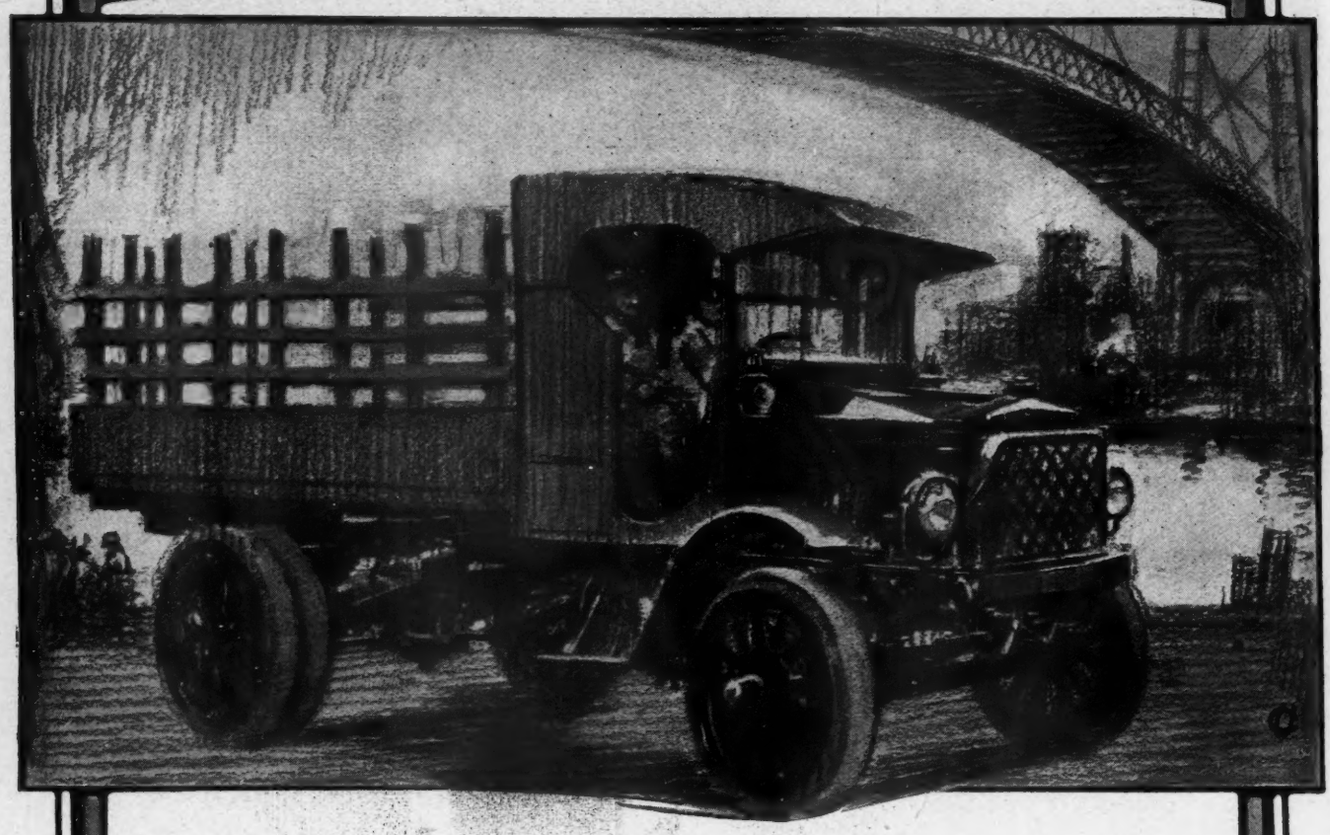

American-LaFrance Commercial Trucks Will Further Establish the World-Wide Reputation of Their Makers

As a result of actual performance, we have received repeat orders for American-LaFrance Motor-Driven Fire Apparatus from practically every American-LaFrance equipped city where additional apparatus has been necessary.

This is the strongest recommendation that can be given to any product.

American-LaFrance Commercial Trucks are designed and built by the same engineers who have made our fire apparatus the standard of the world. They can be relied upon to function with the same regularity that has prompted repeat orders for American-LaFrance Motor-Driven Fire Apparatus.

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

FACTORY BLOOMFIELD, N. J. ELMIRA, N. Y. *NEW YORK OFFICE* 250 WEST 57th ST.

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WHO IS YOUR TRUCK TIRE DEALER?

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

EVERY advantage that the best of tires and the best of service can afford the truck owner is offered by the Goodyear Truck Tire Service Station Dealer.

The Goodyear Dealer has the right tire for every hauling need.

His line of truck tires is the one complete line providing a special type of tire for the particular service condition —Goodyear All-Weather and Smooth Tread Solid Tires, Goodyear Cord Truck Tires, and the new Goodyear All-Weather Tread Cushion Tire.

His stock of these splendid tires is ample at all times to meet routine requirements or emergency calls. His facilities for applying tires promptly and correctly are always adequate.

And his ability to give the kind of service that gets out of the tire the utmost in efficient performance at low cost per mile is equaled only by his *willingness* to give that service.

Finally the Goodyear Truck Tire Service Station Dealer is a responsible business man, who knows Goodyear Tires deliver maximum value and who stands squarely behind every Goodyear Tire he sells.

You give your hauling equipment its best opportunity to perform profitably and economically when you rely on the Goodyear Truck Tire Service Station Dealer and Goodyear Tires.

Goodyear Means Good Wear

GOODYEAR

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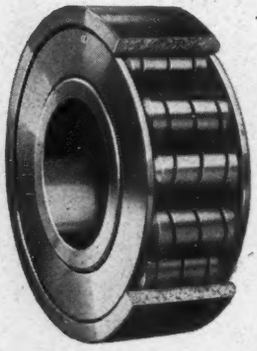
HYATT

THE most casual glance at an Oldsmobile reveals it to be a car of unusual and distinctive beauty. Closer knowledge of Oldsmobile reveals further that its mechanical excellence is on a par with its exterior appearance.

Today, as in the past, Hyatt Roller Bearings play a prominent part in contributing to Oldsmobile dependability. In both the new four and eight cylinder Oldsmobile models, four Hyatt Roller Bearings are used in the rear axle construction.

These bearings have helped to assure the sturdy, quiet, and trouble proof rear axle characteristic of Oldsmobile motor cars by carrying the gear load at the differential and the car's weight at the hubs.



A Hyatt bearing with part of outer race removed to show the spiral rollers.

HYATT ROLLER BEARING COMPANY

Motor Bearings Division: **Detroit, Michigan**

Tractor Bearings Division	*Pacific Coast Division*	*Industrial Bearings Division*
Chicago, Ill.	San Francisco, Cal.	New York, N. Y.

HYATT QUIET BEARINGS

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Truck Service— Without a Limiting Factor

Perishable Food Products, that are marketed in large quantities in every city in the country, must be delivered quickly from the producing farms to be fresh in the marketing places.

How and when is this delivering done? Visit any Market in the early hours of the morning, before daylight, and you will see long lines of motor trucks pulling up to the unloading platforms, discharging their loads of fresh vegetables, and pulling away again. The motor truck does it.

The long drive from the farm to the market before daylight, the dark, uneven streets of the market place and the congested traffic there during those hours are only a few of the things the Produce Farmer has to contend with. And they are also reasons why he would welcome a truck that has complete electrical equipment.

The Truck that is completely equipped electrically—that has Starting, Lighting and Battery Ignition Apparatus as a part of its original equipment—will give not only the Produce Farmer, but other truck owners, as well, truck service—without a limiting factor.

Westinghouse Electrical Automotive Service has no limiting factor, either. It completely covers the country—it takes care of the owners of automotive vehicles, Westinghouse equipped, wherever they may be.

Ask for the list of our 290 Authorized Service Stations

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
Automotive Equipment Department
Sales and Service Headquarters: 82 Worthington St., Springfield, Mass.

W WESTINGHOUSE ELECTRIC

Westinghouse

STARTING, LIGHTING & IGNITION

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General Motors Trucks

The rapidly increasing number of GMC trucks that are being registered for license in the various states is tangible evidence of the business growth that is being enjoyed by the retail representatives of these quality motor trucks.

Each new report shows a very creditable gain in all sections of the country. This undoubtedly is due to the remarkable value of GMC trucks and to the fact that they contain exclusive features—long desired by motor truck owners and now obtainable only in GMC trucks.

These features—the high quality of these trucks and the value which they offer motor truck users all contribute to the profit of the dealer who is fortunate enough to possess a GMC franchise.

They make such a dealership well worth the while of any far-sighted, progressive business man.

GENERAL MOTORS TRUCK COMPANY—*Pontiac, Michigan*
Division of General Motors Corporation

1 Ton $1295 2 Ton $2375 3½ Ton $3600 5 Ton $3950
Chassis Only—At the Factory—Tax to be Added

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MIDWEST

Performance—*and* Price

A NEW schedule of prices on all sizes of Midwest Engines became effective (August 10th).

This new—lowered—schedule is the result of careful analysis of production costs based upon volume production—of a quality product.

On a product of admittedly exceptional *performance* ability—proved in truck—tractor—motor bus—and taxicab service—you will find us *now* able to *out-sell* most any *worth-while* engine commercially available.

Two sizes (of four-cylinder) also ready for passenger car installation containing *all the* distinctively Midwest features.

Complete data promptly sent upon request.

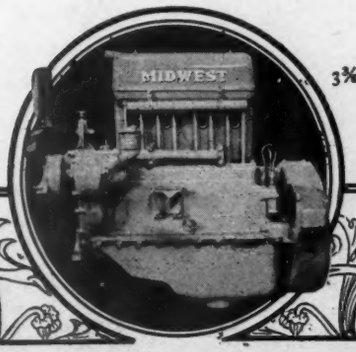
Address Dept. 15.

Very truly yours,

MIDWEST ENGINE CORPORATION
INDIANAPOLIS, U. S. A.

Lon R. Smith

LON R. SMITH, *Vice-President*
Directing Sales and Advertising



Sizes
3⅜x4½ 3⅜x5 4⅛x5¼
4½x6 4¾x6

Forget Bore and Stroke - It's Performance that Counts

INTERNATIONAL MOTOR TRUCKS

Free Inspection—Four Times a Year

EVERY purchaser of an International Motor Truck is given a Free Inspection Service Policy which guarantees inspection of the truck by a factory-trained road engineer four times a year. Not merely for the first year, nor the second, but for the life of the truck.

This Plan gives the International Motor Truck dealer a distinct advantage, and makes the International Contract an unusually valuable franchise. For two years the Company, the dealer, the owner, and the driver have been working under this Plan for greater service and increased satisfaction. They have a common interest, and each in helping the others helps himself.

If you are interested in such sales and service co-operation, and have definite facilities for motor truck representation, we suggest that you write for further details of the International Contract and the Free Inspection Service Policy.

A Complete Line

International Low-Cost Hauling Equipment is built in eleven sizes, ranging from the Model S Speed Truck to the heavy-duty freighter of 10,000 lbs. capacity. Special bodies can be furnished for every purpose.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(INCORPORATED)
CHICAGO U S A

93 Branch Houses in the United States

FOR LOW-COST HAULING

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Over-Mountain Records in January

Trenton, N. J. to Cleveland and back, via Pittsburgh, in four days to keep business appointments! One must have faith in the vital units of his car, based on past performance, to start out casually on such a trip.

The last 369 miles was a dash over the icy mountain roads from Pittsburgh to Trenton in nine hours and fifteen minutes.

The car was a stock four passenger Sporting model with its regular equipment of Brown-Lipe-Chapin Differentials.

Such dependability of differential gears is of value to the car owner not only in the original equipment, but in the ultimate renewal of such vital parts.

BROWN-LIPE-CHAPIN
DIFFERENTIALS

BROWN-LIPE-GEAR
TRANSMISSIONS

Both at Syracuse N.Y.

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Bowen-Empress

HIGH PRESSURE LUBRICATING SYSTEM

FOR ALL MOTOR CARS AND TRUCKS

How The Kelly-Springfield Motor Truck Company Regards The Bowen-Empress System

THE KELLY-SPRINGFIELD MOTOR TRUCK CO.

SPRINGFIELD, OHIO

March 2nd
1 9 2 2

Mr. Ross,
Bowen Products Corporation,
Auburn, N. Y.

Dear Sir:

We are in receipt of your letter of February 24th, requesting a photograph of a Kelly-Springfield truck and also requesting us to outline our reasons for adopting the Empress System of Lubrication. Enclosed you will find photograph of our model K-41 truck which would be suitable for publication.

Our reasons for adopting the Empress System were

1: The good will shown our company in the past and present, and because you are a reliable source of supply.

2: Because it was the consensus of opinion that your outfit was far superior to other makes, inasmuch as it took less time to operate, was clean, and would stand up under the use it would be put to by truck drivers.

3: Because of your policy for our service requirements, inasmuch as you would allow us to sell direct to our customers this outfit.

We might add that we have now been in production for some time with your outfit and we have yet to receive the first complaint, and in these critical times it speaks very well for your lubricating system.

Yours very truly,

THE KELLY-SPRINGFIELD MOTOR TRUCK CO.,

BY: L. F. Hosley
L. F. Hosley
Chief Engineer

LFH:GL

Installed on your trucks, it will render this same satisfactory and effective service, provide proper lubrication and help to keep down maintenance costs.

By eliminating the drudgery and messiness of other methods, the Bowen - Empress System provides the driver with a real incentive for keeping his truck properly lubricated, saving many dollars in repair bills.

Ease, speed and effectiveness of operation together with the absence of the usual mechanical troubles encountered in similar pressure systems are its outstanding features.

Write for Descriptive Folder No. F-302

Bowen Products Corporation

Auburn Division, Auburn, N. Y.

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Strom BEARINGS

Meet Every Ball Bearing Requirement

STROM BEARINGS are made for the purpose of giving maximum ball bearing service under the most exacting conditions. Every step in their manufacture is directed toward this end.

They are correctly designed, made of the highest grade materials, and heat-treated by the most modern and approved methods.

They are conscientiously manufactured in a wide range of types and sizes by expert workmen, and are rigidly inspected after every operation.

A staff of Strom engineers will be glad to give you the benefit of their experience in the selection of the type and size of bearing for your particular installation.

U. S. BALL BEARING MFG. CO.
(Conrad Patent Licensee)
4542 *Palmer Street* CHICAGO, ILLINOIS

Double-row, maximum type, radial bearing

Double-acting, self-aligning thrust bearing. 2100 Series

Double-acting, self-aligning thrust bearing with leveling washers. 2100-U Series

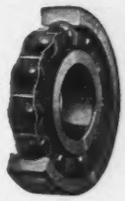
Single-acting, self-aligning thrust bearing, leveling washer. 1100-U Series

Double-acting, thrust bearing, flat seats. 2100-F Series

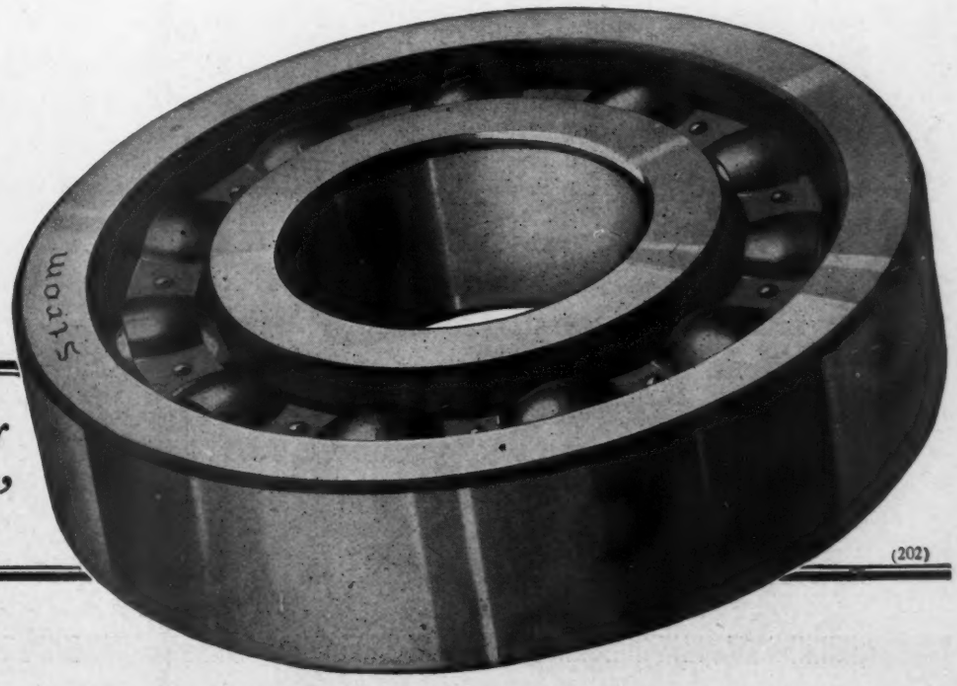
Double-row, deep-groove Conrad type, radial bearing

Single-row, deep-groove Conrad type, radial bearing

Angular contact bearing—combination radial and thrust


Single-row, maximum type, radial bearing

—used "Wherever a Shaft Turns"



(202)

Lee Automatic Dump Body

DUMPS WITHOUT POWER

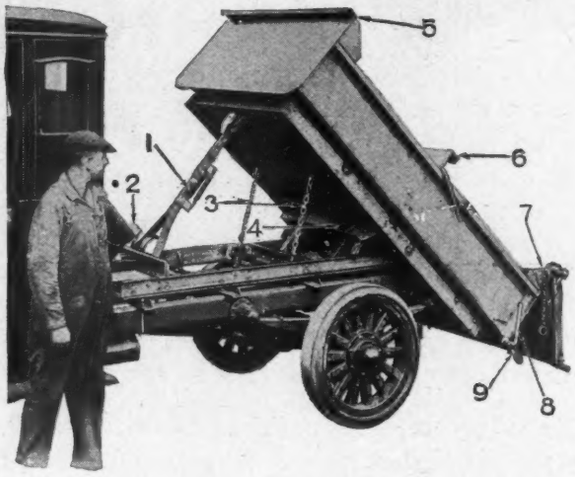
1 **Folding Standard**—automatically locks body in dumping position.

2 **Control Lever**—automatically locks body in traveling position.

3 **Check Chains**—prevent malalignment of body on uneven ground.

4 **Roller Segment**—rolls on a low track, giving low overall height.

5 **High Dumping Angle**—moves the stickiest material quickly.



6 **Partition**—divides load for multiple batch hauling. ($25 extra.)

7 **Spreader**—lays gravel, stone, etc. evenly and efficiently.

8 **Gate Control**—affords automatic and manual operation.

9 **Lowest Dumping Point**—gives ample ground clearance.

ELIMINATE TRUCK TROUBLES

LEE BODIES eliminate half the total troubles of a dump truck, as it does not use a HOIST with its numerous complicated parts that are subject to improper installation, adjustments and wear, road shocks, vibrations, exposure to dirt, dust, weather, etc., etc.

INCREASE DAILY TONNAGE

The conventional type of mechanical-operated dumping body is a highly complicated mechanism, high in first cost, high in selling price, and high in upkeep expense, and the very quality that makes its production cost unnecessarily high—its great and needless complexity of construction—is the quality that makes it undependable, liable to frequent service interruptions and a source of lasting grief to buyer and seller alike.

SAVE ON FIRST COST

By eliminating the complications inherent in power-operated dumping bodies, an economy in first cost of about 40% has been made possible, while every advantage of these types has been retained without their disadvantages—costs of maintenance and loss of time for repairs, excessive weight and unnecessary high price.

LEE TRAILER AND BODY COMPANY, 2343 S. La Salle Street, Chicago, Ill., U. S. A.

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Extreme ductility enables a Certified Malleable Casting to withstand the most severe punishment without fracture. Here is shown such a casting before being put to the hammer test.

The same casting after cold bending under the hammer. It is difficult to realize that a casting can be so treated without showing some sign of fracture.

Certified Malleables Resist Shock and Abuse

Many people, not familiar with the unusual physical properties of high grade malleable iron, scarcely realize that it will withstand the rough treatment indicated by the specimens shown above.

During the past ten years, able scientists and practical foundrymen, operating through the American Malleable Castings Association, have greatly improved the uniformity, quality, and integrity of malleable castings. The latest specifications established by the Association for its members call for 50,000 pounds tensile strength and 10% elongation:—an increase of 32% in tensile strength and 100% in elongation, over the requirements when the Association's research work started.

During this same period, other desirable properties, such as soundness, smooth finish, uniform integrity and easy machining qualities have shown even greater improvement. Certified Malleables improve the quality, prolong the life, and enhance the value of all automotive, railway, farm implement, and general industrial construction in which they are used.

Certificate Holders for the Quarter Ending June 30, 1922

Albany Malleable Iron Co.	Albany, N. Y.
Albion Malleable Iron Co.	Albion, Mich.
American Malleable Castings Co.	Marion, O.
American Malleables Co.	Lancaster, N. Y., and Owosso, Mich.
Badger Malleable & Mfg. Co.	South Milwaukee, Wis.
Belle City Malleable Iron Co.	Racine, Wis.
Chain Belt Co.	Milwaukee, Wis.
Chicago Malleable Castings Co.	West Pullman, Chicago, Ill.
Columbus Malleable Iron Co., The	Columbus, O.
Danville Malleable Iron Co.	Danville, Ill.
Dayton Malleable Iron Co.	Dayton, O. and Ironton, O.
Decatur Malleable Iron Co.	Decatur, Ill.
Devlin Mfg. Co., Thomas	Philadelphia, Pa.
Eastern Malleable Iron Co., The— Works, Naugatuck, Conn.; Bridgeport Malleable Iron Works, Bridgeport, Conn.; Troy Malleable Iron Works, Troy, N. Y.; Wilmington Malleable Iron Works, Wilmington, Del., Vulcan Iron Works, New Britain, Conn.	Naugatuck Malleable Iron
Erie Malleable Iron Co.	Erie, Pa.
Federal Malleable Co.	West Allis, Wis.
Fort Pitt Malleable Iron Co.	Pittsburgh, Pa.
Frazer & Jones Co.	Syracuse, N. Y.
General Electric Co.	Erie, Pa.
Illinois Malleable Iron Co.	Chicago, Ill.
Iowa Malleable Iron Co.	Fairfield, Ia.
Kalamazoo Malleable Iron Co.	Kalamazoo, Mich.
Laconia Car Co.	Laconia, N. H.
Lakeside Malleable Castings Co.	Racine, Wis.
Link-Belt Co.	Indianapolis, Ind.
Marion Malleable Iron Works	Marion, Ind.
Moline Malleable Iron Co.	St. Charles, Ill.
National Malleable Castings Co., The	Cleveland, O., Chicago, Ill., Indianapolis, Ind., Toledo, O., E. St. Louis, Ill.
Northern Malleable Iron Co.	St. Paul, Minn.
Northwestern Malleable Iron Co.	Milwaukee, Wis.
Peoria Malleable Castings Co.	Peoria, Ill.
Pittsburgh Malleable Iron Co.	Pittsburgh, Pa.
Rhode Island Malleable Iron Works	Hillsgrove, R. I.
Rockford Malleable Iron Works	Rockford, Ill.
Ross-Meehan Foundries, The	Chattanooga, Tenn.
St. Louis Malleable Casting Co.	St. Louis, Mo.
Saginaw Malleable Iron Co.	Saginaw, Mich.
Standard Malleable Castings Co.	Terre Haute, Ind.
Stowell Co., The	South Milwaukee, Wis.
Symington Co., T. H., The	Rochester, N. Y.
Temple Malleable Iron & Steel Co.	Temple, Pa.
Terre Haute Malleable & Mfg. Co.	Terre Haute, Ind.
Trenton Malleable Iron Co., The	Trenton, N. J.
Union Malleable Iron Co., The	E. Moline, Ill.
Vermilion Malleable Iron Co.	Hoopeston, Ill.
Wanner Malleable Iron Co.	Hammond, Ind.
Warren Tool & Forge Co	Warren, Ohio
Webster Mfg. Co., The	Chicago, Ill.
Wisconsin Malleable Iron Co.	Milwaukee, Wis.
York Mfg. Co	York, Pa.
Zanesville Malleable Co.	Zanesville, O.

Certificate holders listed here are manufacturers whose product for the quarter indicated has regularly met the requirements of the Association. In the judgment of the Association's Consulting Engineer, their plant practice is such as to produce uniform material of high character and integrity.

THE AMERICAN MALLEABLE CASTINGS ASSN.
The 1900 Euclid Building Cleveland, Ohio

POSITIVE PHYSICAL PROPERTIES — AcA CERTIFIED TRADE MARK

CERTIFIED-MALLEABLE CASTINGS

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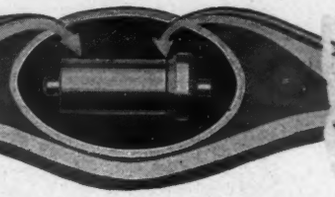
CARRIES THE LOAD

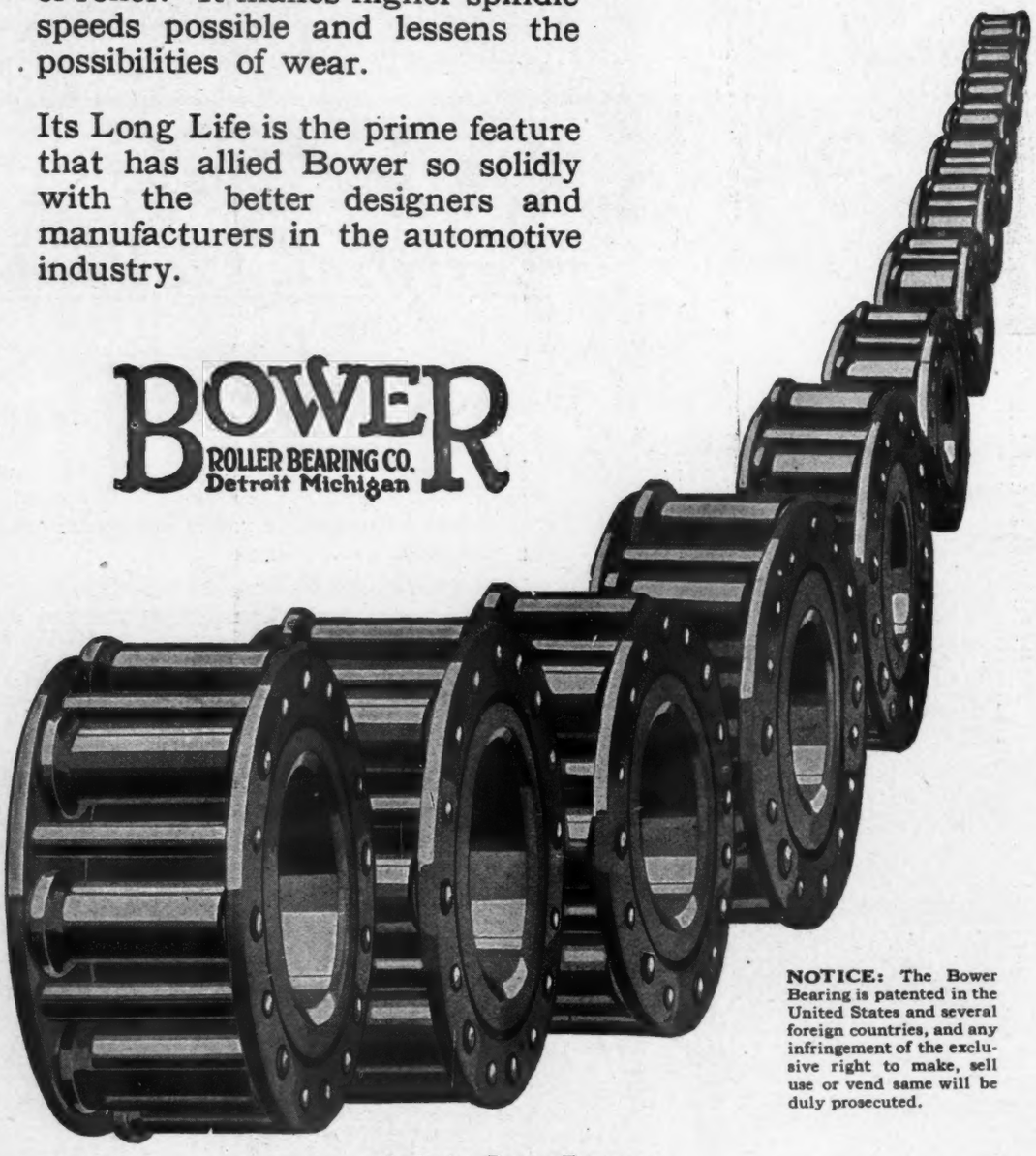


TAKES THE THRUST

THE Bower principle allows the use of a larger diameter of roller. It makes higher spindle speeds possible and lessens the possibilities of wear.

Its Long Life is the prime feature that has allied Bower so solidly with the better designers and manufacturers in the automotive industry.

BOWER
ROLLER BEARING CO.
Detroit Michigan



NOTICE: The Bower Bearing is patented in the United States and several foreign countries, and any infringement of the exclusive right to make, sell use or vend same will be duly prosecuted.

Exclusive Bower Features

Separate bearing surfaces for load and thrust. Parallel raceways. Self-aligning. Never need adjusting. Does not develop end thrust under loads. Will not bind or end-slip.

BOWER SAVES POWER

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

In buses and trucks, where the load is heavy and constant, gear lubrication has much to do with fuel economy and full delivery of engine power.

DIXON'S 677

For Transmission and Differential Gears

has passed all the existing tests and made new standards of its own. It costs a little more per pound, but less per year, and the savings in fuel and power are surprising.

Bus and truck dealers should write at once for proof and Booklet No. 112-G.

JOSEPH DIXON CRUCIBLE COMPANY
Jersey City, N. J. **Established 1827**
MAKERS OF QUALITY LUBRICANTS

For Spur and Bevel Gears Use Dixon's Gear Lubricant No. 677
For Worm Drives Use Dixon's Gear Oil No. 675
For Universal Joints Use Dixon's Grease No. 672

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"Frequent inspection of brakes means safety"

RUSCO BRAKE LINING

Facts that sell Rusco Brake Lining

THERE is no rubber in it. It is just as safe in wet weather as in dry.

To guarantee uniform quality, Russell Mfg. Co. spins its own asbestos yarn and "Solid-weaves" Rusco Brake Lining on special looms of its own design and construction.

Pure asbestos will not burn. Neither will Rusco Brake Lining.

Bend or twist it as you please. You cannot crack or tear it. Its great toughness, combined with great flexibility, prevent its acquiring a dangerously smooth and slippery surface.

It is guaranteed to be safe and to give satisfaction.

THE RUSSELL MANUFACTURING CO.
MIDDLETOWN, CONNECTICUT

EVERY
RUSCO PRODUCT
IS MADE FOR SERVICE

- Rusco Brake Lining
- Rusco Clutch Facings
- Rusco Hood Lacing
- Rusco Tow Line
- Rusco Fan Belts
- Rusco Tire Straps
- Rusco TABBUCKLER Straps
- Rusco Emergency Brake for Fords
- Rusco Transmission Lining for Fords
- Rusco (Denonco) Non-Chatter Bands for Fords

They Speak for Themselves
TRADE MARK REG.

RUSCO PRODUCTS

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Competition-Proof STANDARD "75"

1¼ Ton Capacity

Price $1330.00

Continental Motor, N-3¾ x 5
Brown-Lipe Clutch Control and Transmission, 30 U. P. P.
Timken Axles { Front 1250 / Rear 6250
Spicer Joints, 300 Series
Stromberg Carburetor, Model OS-1
Eisemann Magneto, G.S. 4-11 E D
Ross Steering Gear, BU
Pneumatic Cord Tires, 33 x 5, F & R

We say "competition-proof" advisedly.

Check up the specifications of the new Standard "75". Note their quality—the finest the market affords. *You know that.*

Compare the amazingly low price—$1330.00—of this brawny, light delivery, worm-drive truck, with that of any other make. There is no equal in value. *You know that.*

That's why we say the new Standard "75" is competition-proof. Your territory may be open now. *Don't delay your decision.*

Standard Motor Truck Co.

Detroit, Michigan

Standard Registered MADE IN DETROIT USA

MOTOR TRUCKS

Get Behind the Competition-Proof STANDARD Line

1½ Ton Standard

These three facts are very pertinent to you. A few of the many reasons that are inducing wide-awake dealers to select the STANDARD line:

1st—Standard Dealers handle a complete line of motor trucks—which means they can honestly fill the exact haulage requirements of each customer.

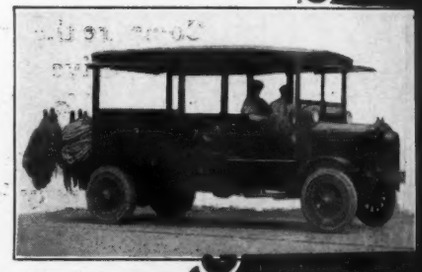
2d—Standard Dealers sell the highest-grade trucks, composed of nationally famous units—on which experienced truck owners are thoroughly sold.

3d—Standard Dealers do not have to burden themselves with an expensive stock of parts. 224 parts stations, blanketing the country, take care of *that*.

Our special banking arrangement for desirable dealers offers unique advantages and insures our joint interests. Ten years of steady progress have placed us in a position to co-operate with our dealers on terms that would be, ordinarily, impossible. Write for the complete details of our Special Dealer Proposition.

3½ Ton Standard

2½ Ton Standard



5 Ton Standard

Standard Motor Truck Co.
Detroit Michigan

7 Ton Standard

Standard DETROIT USA MOTOR TRUCKS

Capacity 1¼ to 7 Tons

STANDARD

THE GENERAL CORD TIRE

—goes a long way to make friends

Wonderful Success in Commercial Service

Business men are attracted to the General Cord for reasons that are not ordinarily associated with the sale of tires. General's dealers use the financial stability of the factory as an argument. They call attention to the enviable position of the factory's stock on the Cleveland and Akron Exchanges. Sound, conservative management is a proof to commercial tire users of the quality of the General Cord.

Great fleets of delivery cars and motor trucks, all over the country, are equipped with General Cords—and this steady, all-year-'round trade is one of the many reasons for the exceptional success that General dealers have enjoyed, even through such an unusually bad year as 1921.

Never a year without a large sales increase! Never a year without some new improvement in the line that has given General dealers the "edge" in competition. Write for the Class "A" exclusive dealer arrangement—and remember that the men behind the General factory were once tire dealers themselves. They know your problems.

THE GENERAL TIRE AND RUBBER COMPANY
Dept. A-9
AKRON, OHIO, U. S. A.

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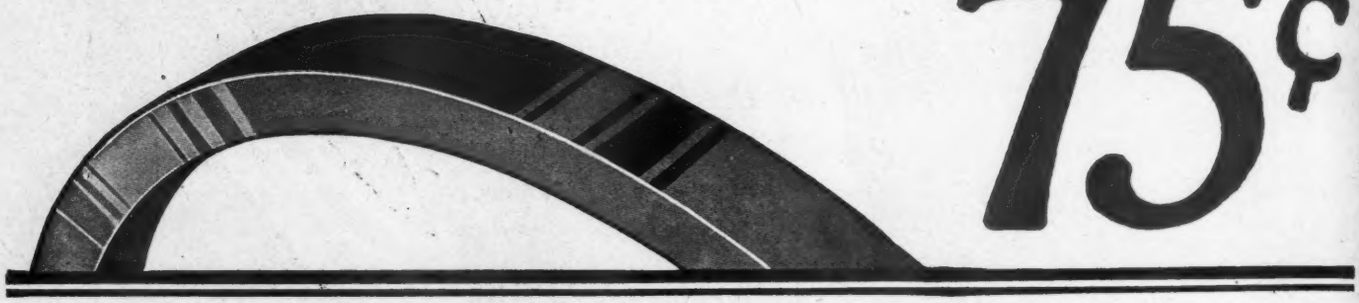
Gill One-piece Piston Rings

Price Reduced to

75¢



reduce fuel consumption

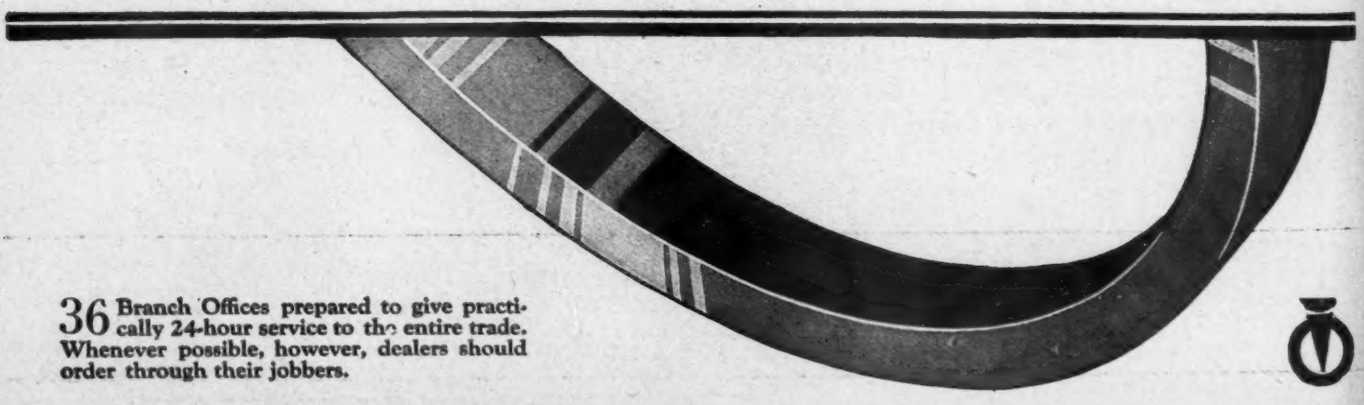
BECAUSE: they are ***individually*** cast from a special gray iron that retains its tension, elasticity, and vitality under all the intense heat and terrific stress and strain of piston ring service. Gill Piston Rings, under all conditions and for thousands of miles, exert an all-around, uniform, leakless contact with the cylinder walls. They hold ***all*** of the fuel in the combustion chamber where ***all*** of it can be compressed into power. Where there are Gill Rings there is no waste.

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone.***

THE GILL MANUFACTURING COMPANY
8300 South Chicago Avenue, Chicago, Illinois

Canadian Manufacturer:
BROWN ENGINEERING CORPORATION, Limited
Toronto, Ontario

Sole Export Agent:
AMERICAN STEEL EXPORT COMPANY, Incorporated
Woolworth Building, New York, N. Y.



36 Branch Offices prepared to give practically 24-hour service to the entire trade. Whenever possible, however, dealers should order through their jobbers.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Bearings Service will supply the proper Bearing *Immediately*

Whenever you are in need of a Timken, Hyatt or New Departure Bearing whether it is for a passenger car, motor truck or tractor, you can be certain of securing the proper bearing immediately at any Bearings Service Company's branch or distributor.

The Bearings Service Company acts as the service department of Timken, Hyatt and New Departure Bearing Companies. It has an organization of 33 direct branches and approximately 1000 distributors located at all convenient points throughout the country.

We want you to consider this company as much a part of your organization as though it were located under your own roof. It is maintained for just that purpose and its facilities for furnishing you with any bearing information you may need at any time are yours for the asking.

BEARINGS SERVICE COMPANY

General Offices: Detroit, Michigan

Branches in Principal Cities

THIRTY-THREE BRANCHES

Atlanta	Buffalo	Detroit	Los Angeles	New Orleans	Pittsburgh	San Francisco
Baltimore	Chicago	Fresno	Milwaukee	New York	Portland, Ore.	Seattle
Birmingham	Cleveland	Indianapolis	Minneapolis	Oklahoma City	Richmond	St. Louis
Boston	Dallas	Kansas City	Newark	Omaha	Rochester	Toronto
Brooklyn	Denver			Philadelphia	Salt Lake City	Winnipeg

Approximately 1000 Distributors in Other Cities

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Lift up the hood—

The new VIM

½-¾ TON TRUCK

will out-perform any truck of like capacity in the world in:

Speed — *High Gear Ratio, 4.7 to 1*

Hill climbing — *4" x 5" Motor*

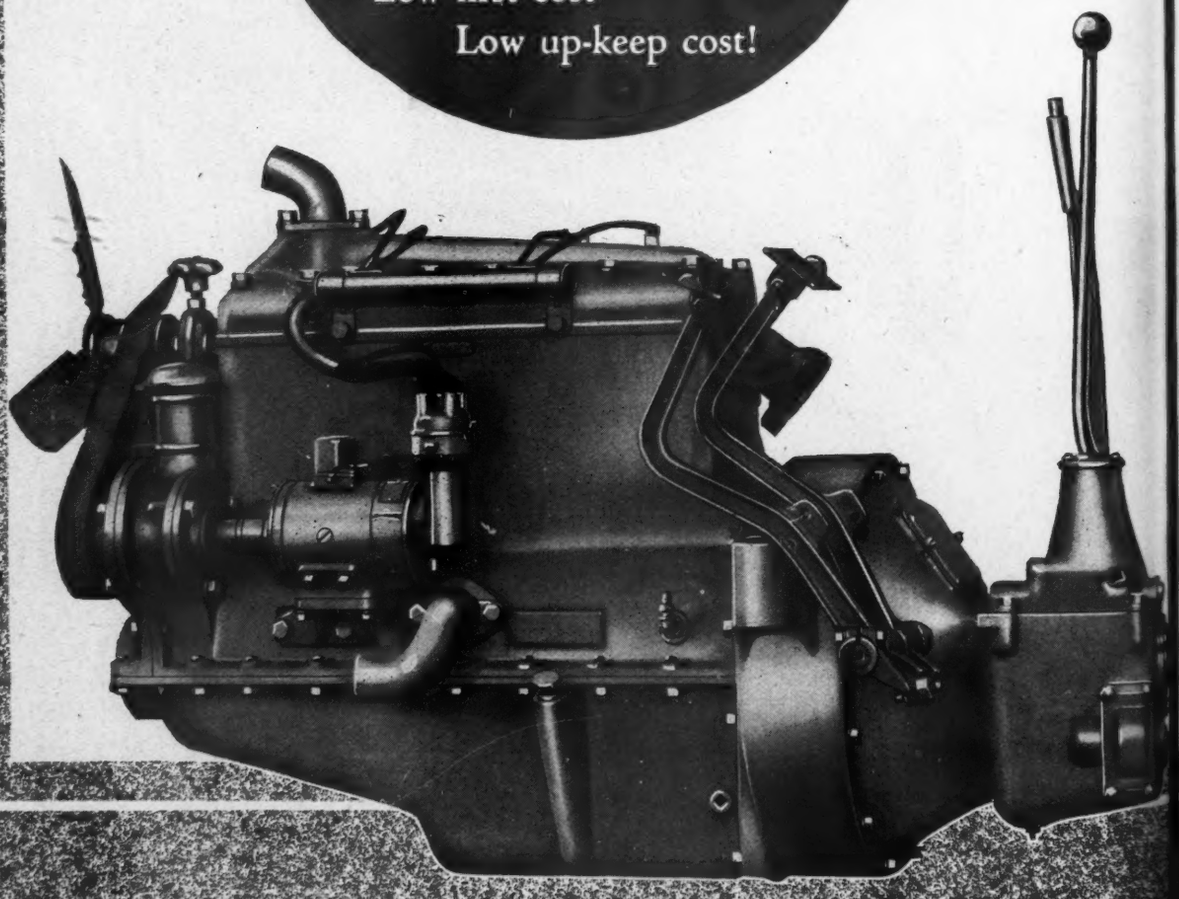
Simplicity of design

Economy of operation

Long life — *Low compression motor, 53 lbs.*

Low first cost

Low up-keep cost!



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see for yourself!

A look under the hood will give SOME idea of what the new VIM is, but—

You must ride in it, must drive it, must subject it to the severest possible tests in order that you may realize FULLY why the new VIM is the greatest light delivery truck in the world!

We've got the goods—if YOU want a *real* dealer proposition to handle a *real* light delivery truck without competition—get in touch with us AT ONCE.

VIM MOTOR TRUCK COMPANY
Philadelphia, U. S. A.

$995.00
f.o.b. Philadelphia Pa.

The NEW VIM
VIM MOTOR TRUCK Co.
MANUFACTURERS
PHILADELPHIA
U·S·A·

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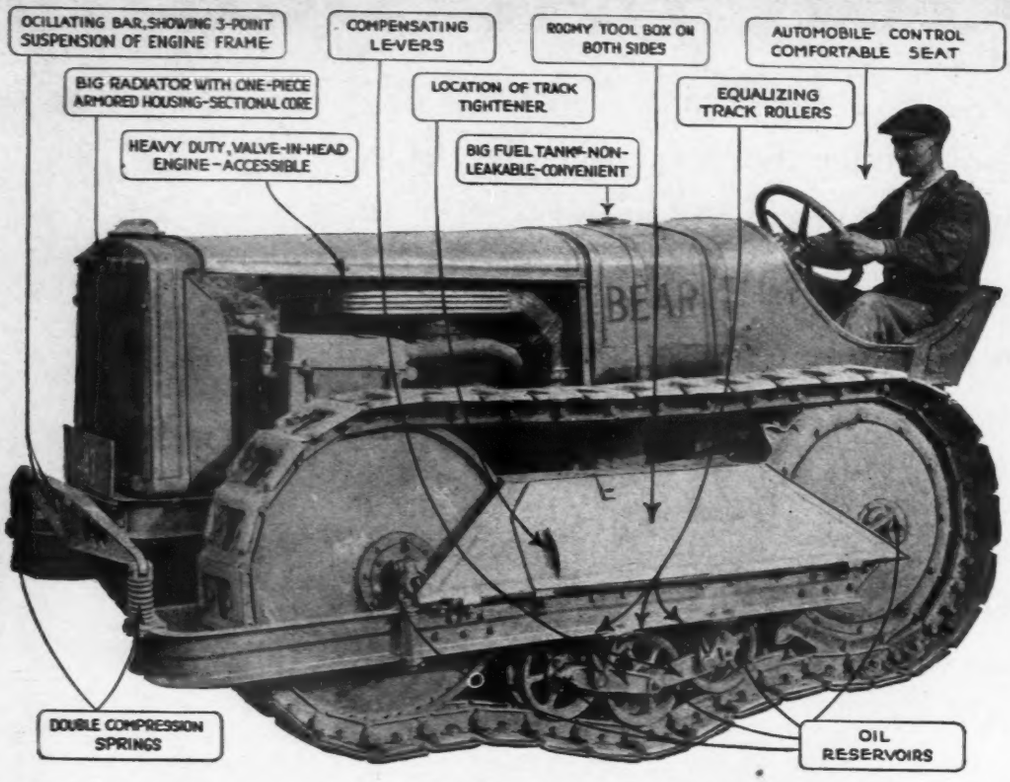
The Bear Tractor



Engine—Four-cylinder; tractor type.

Bore and Stroke—4¾ x 6½.

Valves—(in head) 2¼" diameter.

Crank Shaft—2⅞" diameter, chrome nickel steel.

Ignition—Bosch magneto, with automatic impulse starter.

Governor—Simplex; gear driven.

Carburetor—Schebler carburetor. Latest model, especially designed for burning low grade fuels.

Fuel Tank—Capacity, 42 gallons.

Air Clarifier—Highly efficient; especially designed; oil type.

Engine Clutch—Five plate; dry.

Cooling—Spirex sectional radiator. Forced feed pump, gear driven fan, delivering 9,000 cubic feet of air per minute.

Lubrication—Forced feed to all engine bearings, including valve gear.

Transmission—Spur gear type. Unusually large margin of safety insured by use of coarse pitch, wide face, chrome-nickel, double heat-treated gears, as well as short, heavy shafts of same materials. Three speeds forward, one reverse.

Drive Clutches—Multiple disc, running dry, 19" diameter, exclusive BEAR design.

Bearings—All of annular ball type throughout, packed against leakage of oil and entrance of dirt.

Track—Drop forged, running dry, each unit readily detachable; of known performance and superior wearing qualities.

Tread Wheels—Front and rear wheels 32" diameter.

Grousers—Knife-edge, drop-forged readily detachable for road work.

Length of Tread—On ground, 64"

Width of Tread—12"

Area on Ground—1,536 square inches.

Weight—5,500 lbs. net. 6,000 lbs. loaded with fuel, oil and water.

Ground Pressure—3.5 to 3.9 lbs. per square inch.

Turning Radius—6 feet.

Horse-Power Rating—25 h.p. at drawbar; 35 h.p. at pulley—100% overload capacity.

Normal Drawbar Pull—3,000 lbs.

Speeds—5.9, 3.4 and 2.1 miles per hour; 2 miles per hour in reverse.

Steering—Both treads are controlled by steering wheel operating individual multiple disc clutches on tread drivers. Five pounds pressure on the steering wheel operates the clutches.

Belt Pulley—Standard pulley is 12" diameter by 9" face. Other sizes obtainable on special order.

General Dimensions:
Width—60"
Width over Tracks—55"
Height over Tracks—42"
Height over Radiator—54"
Length—118"
Length, Exclusive of Seat Overhang—112⅛"
Clearance—11"

Number Plows Recommended—Four 14"

PRICE $4250

The Tractor that Delivers its Power to the Drawbar

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

The Bear Tractor

Features that Put Enthusiasm into Selling

As you go over the Bear Tractor, feature by feature, you will, as a salesman, instinctively think of what a "buy" it is for the man who pays the operating cost and maintenance cost.

Also, you will recognize the adaptability of the Bear to an unusually wide range of uses, such as is found in street work, in road construction and repairing, in oil fields, in farming and ranching, in lumbering, in mining — and, in fact, in any heavy hauling, road building, plowing or other kind of work where power AT the drawbar counts.

You will quickly become conscious of what the features of the Bear Tractor mean to the user. You will put yourself in the buyer's position. You will imagine yourself the owner and operator. You will feel that sense of elation which is felt by the man who buys a product and finds it even more satisfactory than he anticipated.

Bear features are of practical importance — of money value. Analyze the Bear. Then with complete selfishness, contemplate *your* opportunities with a franchise to sell such a tractor.

Here are a few of the many features that put enthusiasm into selling Bear Tractors: Weight —2 tons lighter than competing tractors. Compactness—6 feet turning radius. Lubrication—once-a-month oiling. Mechanical Efficiency—80% of the engine's horsepower delivered to the drawbar. Track Roller System — rollers force track to grip ground throughout full length. Track—upkeep lowest on record. Drawbar—resilient; whiffletree hitch. Bearings — 36 annular ball bearings. Control—automobile type. Seat—spring cushioned, upholstered. Flexibility — three-point suspension, 16-inch oscillation. Track Adjuster—rachet, self-aligning. Engine —heavy duty, 70 h. p. at 1200 r. p. m.

More than 700 pounds of alloy steel; rugged shafts without overhang; spline fits; SAE bolts and nuts throughout; heavy, broadfaced, stub-tooth gears; powerful multiple disc steering clutches; manganese steel track links; drop forged grousers; pressed steel track rollers—these are other features that put life into the selling of Bear Tractors and give confidence to the man who feels the responsibility for the machine he sells.

The combination of Bear Features, Bear Quality of Materials, Bear Craftsmanship gives the Bear Tractor its adaptability to a *wide range of uses, its low operating cost* and *its low maintenance cost.*

Write today regarding unassigned territory, and ask for catalog and distributor's and dealer's proposition.

BEAR TRACTORS INC., 5303 PARK PLACE, NEW YORK CITY

The Tractor that Delivers its Power to the Drawbar

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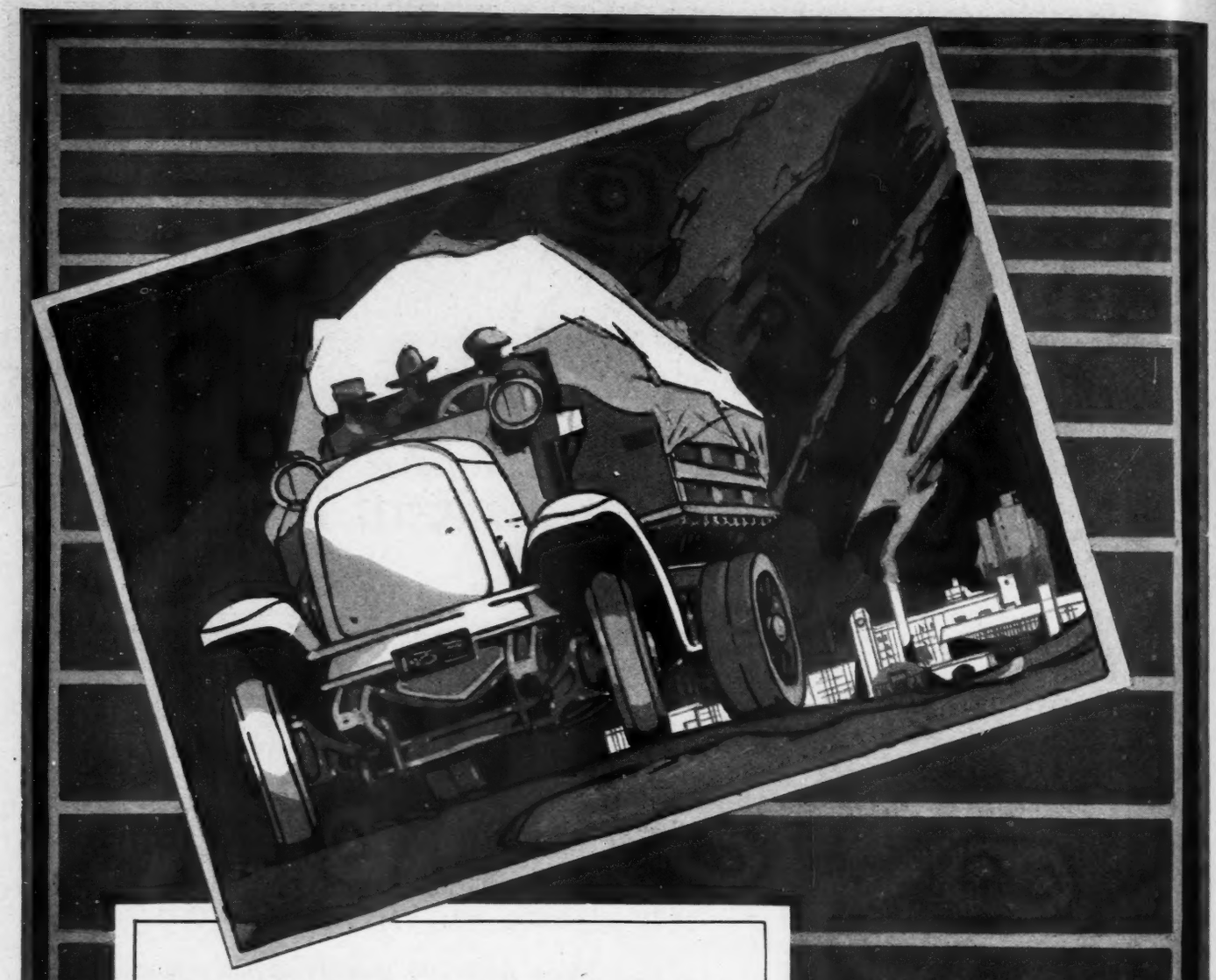

ECONOMY—EFFICIENCY

The "ship by truck" age is here. The motor truck is an important factor in merchandise transportation.

To keep up with the heavy demands—to haul quickly and economically you must have power that can be depended upon. Power every minute of every hour your truck is on the road.

You get it with Stromberg equipment. There is efficiency *and* economy—unfailing driving force developed at least cost per mile. Greater tonnage is made possible.

The Stromberg Carburetor is standard equipment of 55% of all listed truck models.

Additional facts upon request—write for them today. State name, year and model of your machine.

STROMBERG MOTOR DEVICES CO.
64 East 25th St., Chicago, Ill.
Dept. 936

New STROMBERG Does it!
CARBURETOR

Transport's Messages in National Magazines Are Reaching Millions

Reproduction from a series of Transport Advertisements appearing in National Publications headed by American Magazine and Literary Digest

Think how many prospective truck buyers in your territory are reached, and influenced, by the Transport Truck Company's National Advertising Campaign—the AMERICAN MAGAZINE, with its 1,800,000 circulation and LITERARY DIGEST with its 1,500,000.

The vigorous response to this campaign indicates the unsurpassed sales possibilities which the Transport complete line, at prices below the pre-war level, offers. Dealers of the first rank in all sections are tying to Transport. They find it a sales-maker—a prestige-builder—a profitable merchandising line from every angle.

Ask for booklet containing our "Questionnaire for Truck Buyers," with answers. This explains in detail the remarkable values you offer with the Transport line.

Transport Truck Company
Mount Pleasant, Michigan

Model 15, 2000 lbs. maximum, Rapid Transport, for light, fast delivery. Equipped with cord tires, electric lights and starter, seat, windshield, fenders and running boards, motometer, speedometer, bumper, extra rim, and carrier **$1295**

Price with above equipment and body, cab, top, and side curtains-$1532

Latest addition to Transport Fleet, owned by Wagner Baking Co., Detroit, Michigan

Phenomenal Market Built on Values

Transport's record sales volume is the logical result of the superior values embodied in Transport—values universally recognized by motor truck distributors, as well as the truck buying public. Leading dealers in the great motor truck centers—dealers who sell only proved winners—are rapidly joining Transport ranks, because they foresee a constantly growing demand for transportation of such merit, at prices below the pre-war level. Let us go into detail with you about Transport Frictionless Trucks—the construction that means years' more service.

Transport's Fair Prices

[Chassis Including Electrical Equipment]

Model 15, 2000 lbs. max.,	$1295	*Model 55, 6000 lbs. max.,*	$2385
Model 25, 3000 lbs. max.,	$1495	*Model 60, 7000 lbs. max.,*	$2585
Model 35, 4000 lbs. max.,	$1885	*Model 75, 10,000 lbs. max.,*	$3485

f. o. b. Factory

Write us for "A Questionnaire for Truck Buyers." Mention capacity you need.

Transport Truck Company, Mount Pleasant, Mich.

Some desirable territory is open to dealers

TRANSPORT TRUCKS

Transport is a Specialized Truck—Every Unit Nationally Serviced

TRANSPORT TRUCKS

Specialized Trucks—Every Unit Nationally Serviced

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The New United $895

Chassis — with Complete Electrical Equipment

Highway Special

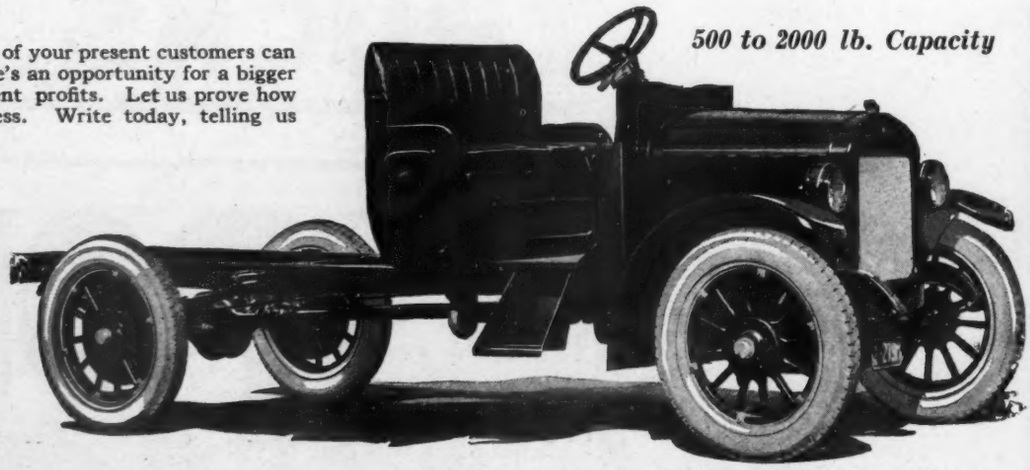
COPYRIGHT 1922

1. 80% of the entire demand today is for a motor truck of one-ton capacity or under.
2. The UNITED Highway Special has been designed specially to meet this growing need with a *real* truck at an exceptional price.
3. Built of standard *truck* parts throughout, to stand up under long, hard use, including farm work and fast express service.
4. 12 years' successful building of UNITED heavy-duty trucks is back of the new Highway Special.
5. It is a profitable truck for you to handle, because it will fit in with your present line of passenger cars or heavier trucks.
6. It will make you able to give your customers *what they want* and will pave the way for you to

Become a General Transportation Merchant

To Established Dealers: Many of your present customers can use a Highway Special. Here's an opportunity for a bigger business and extra permanent profits. Let us prove how this applies to *your* business. Write today, telling us what lines you now handle.

500 to 2000 lb. Capacity



The United Line is "THE LINE OF LEAST RESISTANCE" because it has been built to meet the needs of 80% of all truck buyers, many of whom are among your present passenger car or truck owners.

UNITED MOTORS PRODUCTS COMPANY

675 Richmond Street, N. W. GRAND RAPIDS, MICH.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Gar Wood Says:

"Time is the infallible judge of every mechanism, and it has put the stamp of approval on Wood-Detroit equipment —the pioneer and the choice in 9 out of 10 installations."

Gar Wood

Built by "Gar" Wood

Gar Wood built the first hydraulic hoist for trucks, and he developed it to its present-day efficiency. The thoroughness with which he met the need is attested by the fact that nearly every maker of trucks recommends the Wood-Detroit, and 90% of the buyers choose the Wood-Detroit.

WOOD DETROIT

Hydraulic Hoists and Steel Bodies

This universal endorsement has made necessary the new Wood-Detroit plant—the largest in the world devoted to the manufacture of hoists and dump bodies, exclusively.

Let us send you the latest data on Wood-Detroit Hoists and Steel Bodies.

Wood Hydraulic Hoist & Body Company

7924 Riopelle Street, Detroit, Michigan

Sales and Service:

New York	St. Louis	Cleveland	Portland	Indianapolis
Boston	Chicago	San Francisco	Denver	Knoxville
Pittsburgh	Minneapolis	Los Angeles	Salt Lake City	Buffalo
Philadelphia	Kansas City	Seattle	Richmond, Va.	

Canadian Factory: Windsor, Ontario

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WHEN *the* SUN

What Happens to Truck

ALONG the country's highways move fleets of motor trucks, carrying the merchandise that must be moved —by day. But when night creeps on—half of them slow down, blind, inefficient and dangerous.

It is estimated that there are over a half million motor trucks traversing the roads with nothing but dimly-lighted side lamps. With present-day transportation demands calling for continuous operation, the loss of time due to inefficient lighting constitutes an apparent menace and waste that should be rectified.

Fortunately there are thousands of other motor trucks *not* so handicapped. On their running-boards is the familiar little Prest-O-Lite Gas Tank with its ample supply of artificial daylight. Following the penetrating, mellow beam of Prest-O-Lite Gas—the nearest approach to sunlight that is known—these trucks operate on time, with perfect safety after darkness falls. Furthermore, they are in no danger of violating the law, as Prest-O-Lite Gas Light is lawful light everywhere.

THE GAS OF A

GOES DOWN
Transportation ?

No other system of motor-truck lighting is impervious to continued road abuse. It is impossible to put a Prest-O-Lite Tank out of order by the hardest kind of service.

The small Prest-O-Lite Tank contains 40 cubic feet of gas—enough to keep two headlights and tail light burning continuously for 30 hours or more, depending upon the size of burners used. When the supply is exhausted, a new tank may be secured from any one of over 22,000 service stations and garages carrying Prest-O-Lite Tanks. Anybody can connect up a full tank in a moment with a wrench. All of these advantages—dependability, economy, ease of installation—are reasons for the growing preference for Prest-O-Lite Gas Lighting Equipment.

For More Information Address

THE PREST-O-LITE COMPANY, Inc.

Small Tank Sales Department

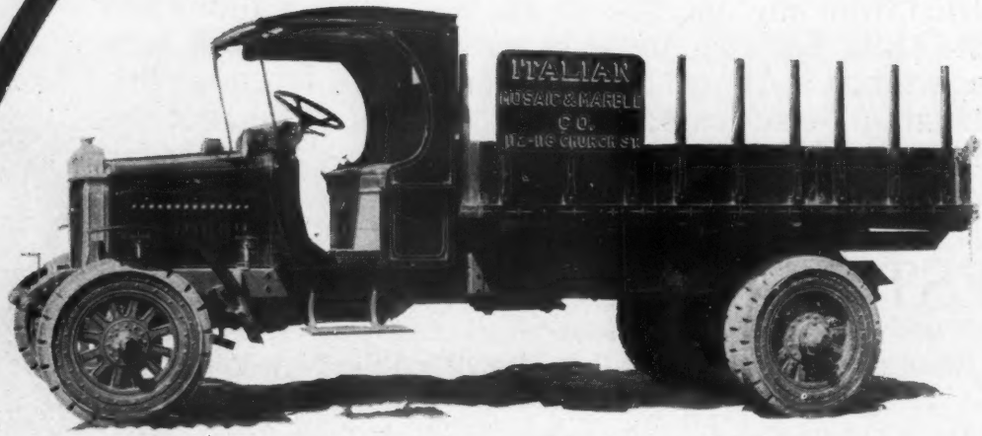
General Offices: Carbide and Carbon Building, 30 E. 42nd St., New York
599 Eighth Street, San Francisco

In Canada: Prest-O-Lite Company of Canada, Limited, Toronto

Many motor trucks operating outside of city limits are not equipped to meet legal requirements. There are also many with front lamps but no rear lamps. These Prest-O-Lite Gas Lighting Systems include both headlights and tail lights, complying with the law everywhere.

THOUSAND USES

MORAND CUSHION WHEELS



3½ TON ATTERBURY TRUCK EQUIPPED
WITH MORAND CUSHION WHEELS

They save money!

WRITE FOR A GOULD REPORT
FOR ACTUAL PROOF OF SAVINGS

MORAND CUSHION WHEEL CO.
800-906 SOUTH MAY STREET
CHICAGO, ILLINOIS

They save the tires, the truck and time and trouble!

IF you are interested enough in Morand Standard Cushion Wheels or Morand Demountable Cushion Elements to want to know why they will make satisfied customers for you, and how they save, just write us for particulars.

Wherever you see trucks—that's a place for a Morand dealer.

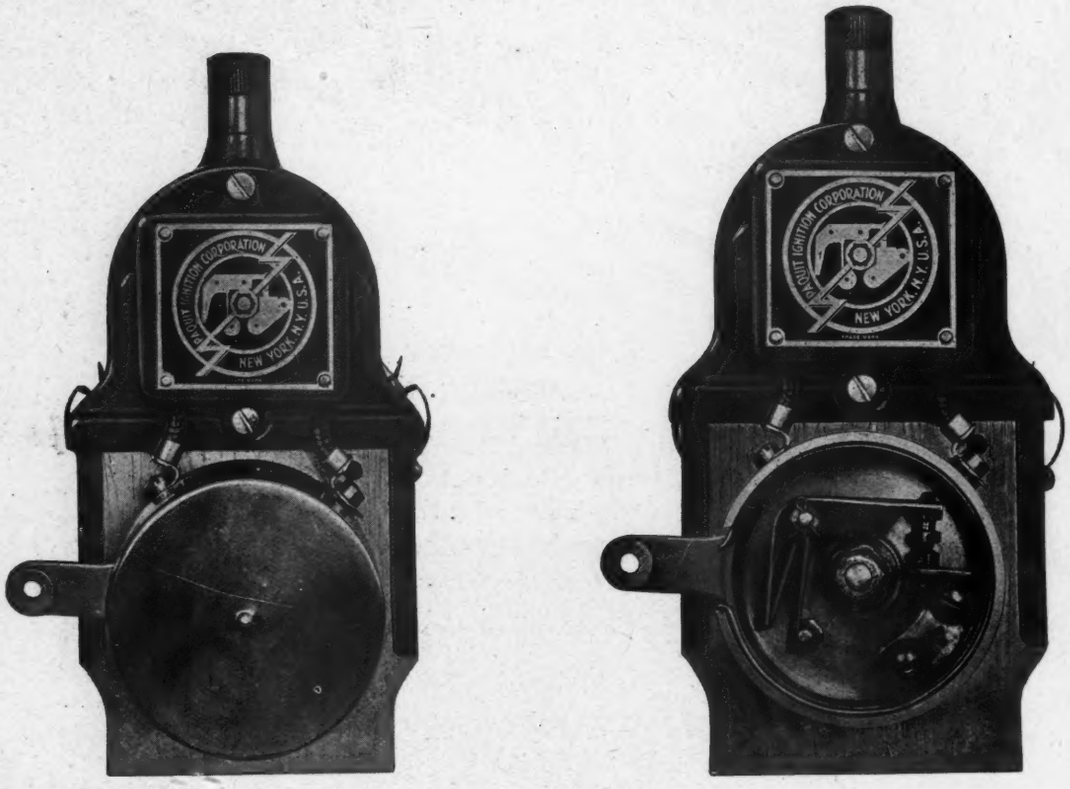
MORAND CUSHION WHEEL CO.
800-906 SOUTH MAY STREET
CHICAGO, ILLINOIS

MORAND
CUSHION WHEELS

"The Paquito"

(Pa-Kee-To)

A Modern Ignition System



A simple unit, quality battery system with **standard magneto base** and **wiring,** providing rapid flame propagation. It will burn the heavy ends of fuel which means pronounced **fuel economy, better acceleration** and **greater power.**

Provides **dependable ignition** so essential to **economical operation** and **maintenance** of the motor truck. Water and fool proof.

Has but **one rotating part** which means long life and no delays on road or visits to the service station.

Operates on any voltage and will operate on a single dry cell.

Breaker box can be displaced by hand and cleaning and adjusting of breaker points done with a patented device with breaker removed entirely from unit.

Produced in four and six-cylinder magneto base types, also vertical units.

PAQUIT IGNITION CORPORATION

1819 BROADWAY NEW YORK CITY

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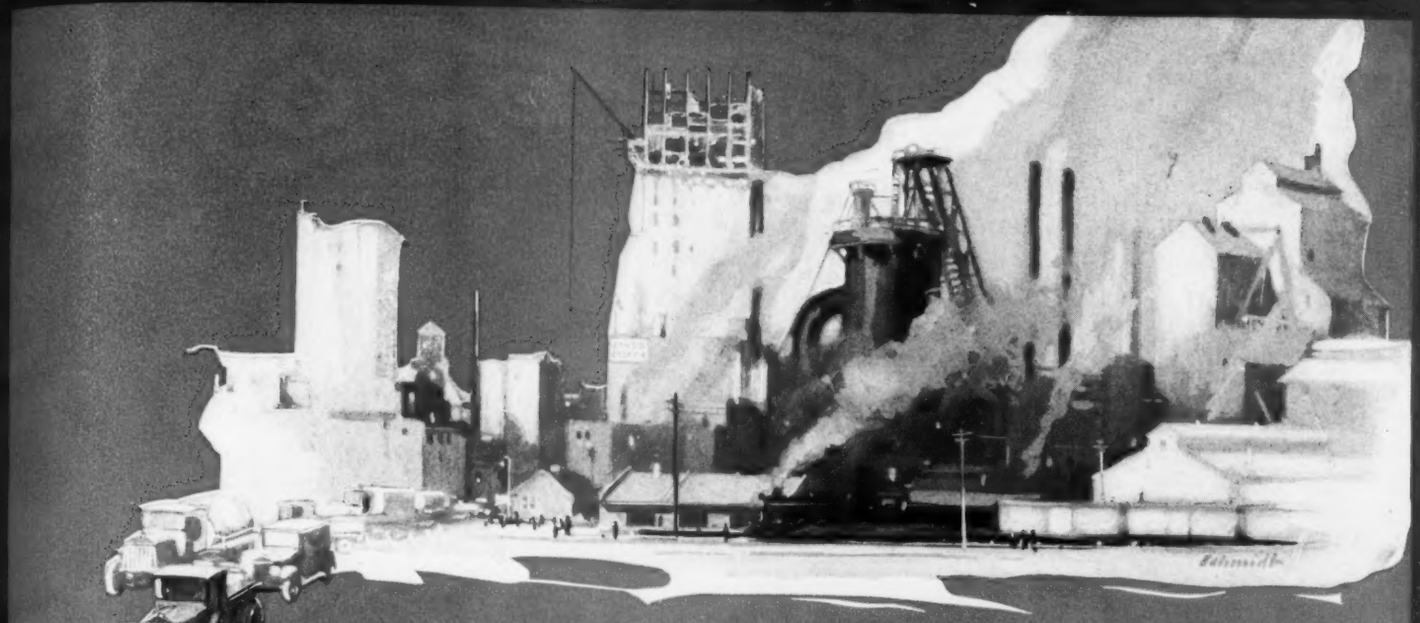


Opening the Road to a New Opportunity

BUSINESS is literally pleading for an intelligent, practical, specialized motor truck service. The motor truck is in the upswing of the tremendous renewed impetus behind all business.

The next few years will see the specialized truck dealer become a big merchant. It is conceded that the solution of growing transportation problems is a vast, mobile fleet of motor trucks economically built and properly serviced.

Recognizing this, a strong group of successful truck manufacturers have formed the Industrial Motors Corporation, and have joined their buying power, plant capacity and resources. This gives to dealers and users new advantages and economies.

The well-known Selden heavy duty trucks, and the popular Atlas "Merchants' Dispatch" speed truck are the first to be included in this new and powerful organization. Both Selden and Atlas are firmly established and widely popular.

Around the in-built qualities of these proven lines will be thrown a modern, intensive sales plan and the combined force of the entire group forming Industrial Motors.

INDUSTRIAL MOTORS
CORPORATION

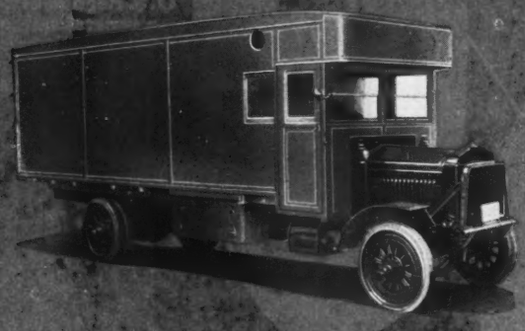
SALES DIVISION: ROCHESTER, NEW YORK, U. S. A.

How A Small Investment Creates A Wide Field of Dealer Profits

YOU, Mr. Dealer, can now realize the profit possibilities of a big, rich field with small investment. You can sell and service every necessary truck unit. The Selden heavy-duty line meets every demand for a big truck with exclusive sales-clinching features of design and construction. The Atlas "Merchants' Dispatch" sells itself on the record of its performance.

Truck prospects want a permanent local responsibility, backed by a single organization big enough to give stability to it. Recognizing the importance of the dealer, Industrial Motors Corporation offers you a plan that permits you to become big and responsible from small beginnings.

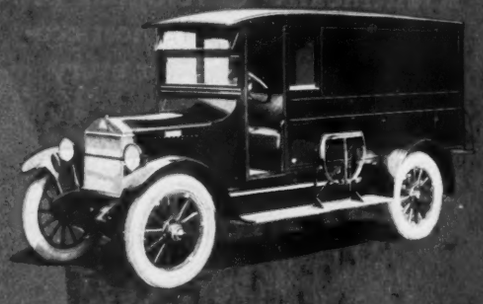
The Selden franchise has long been regarded as the model sales plan for constructive dealer development. It will now be applied to all in the Industrial Motors organization. With the low-priced and nationally popular Atlas "Merchants' Dispatch" in stock you find action and turnover in daily business. Sales of heavier units come automatically. You are specializing in truck transportation and have everything requisite to it.



Selden
Heavy Duty Trucks

Manufactured by Selden Truck Corporation Division of Industrial Motors Corporation

Selden full-flexible construction is more than a trite selling phrase. It is a distinct engineering achievement that meets the stresses thrown constantly upon the heavy duty truck. It is a powerful sales argument wherever may be the prospect for a big truck. Selden performance is an established fact that any dealer can successfully merchandise.



ATLAS
WORM DRIVE
"Merchants' Dispatch"

Manufactured by Atlas Truck Corporation Division of Industrial Motors Corporation

Atlas "Merchants' Dispatch" is universally known as the speed truck with heavy duty stamina. The only worm-driven speed truck in the market. Unmistakably indicated where low cost mileage, snappy performance, and continuous duty are required. Atlas chassis is the result of a specialized study of speed truck needs. Detail of finish makes the line.

INDUSTRIAL MOTORS
CORPORATION

SALES DIVISION: ROCHESTER, NEW YORK, U. S. A.

Go where you get the Truck Tire Service

WHEREVER trucks are in operation today you will find this true—

Truck tires made for use under certain loads and speeds are wasting tire money and repair money when used under conditions for which they are not intended.

U. S. Truck Tire Dealers are giving a service to truck owners that cuts the cost per delivered load—per trip—per mile.

The four types of U. S. Truck Tires —Regular Solid, Nobby Truck, High Size, and Mono-Twin, each one scientifically developed, provide the correct and most economical equipment for every trucking condition.

Ask the U. S. Truck Tire Dealer.

U. S. Regular Solid —a general service tire for average loads at moderate speed, broad flat tread.

U. S. Nobby Truck Tire — Built especially for commercial service where speed and maximum cushion are required.

U. S. High-Size— More rubber than regular solid, giving greater cushion and greater mileage.

U. S. Mono-Twin — The heavy duty cushion tire for big trucks at moderate speeds over all types of roads.

United States Tires are Good Tires

United States Tires

United States Rubber Company

Fifty-three Factories — *The Oldest and Largest Rubber Organization in the World* — *Two hundred and thirty-five Branches*

EATON

Two Markets That Are Undersold

Have you made an honest effort, not for one week or month, but over a period of months, to sell a truck to every substantial farmer in your vicinity who lacks adequate truck equipment?

Have you studied the transportation problems of the merchants in your community, and of all the other business men who have goods to move?

The figures show that both these markets are amazingly *undersold.*

It takes a real business man to sell trucks, but it's worth the effort, for the market is there for the man who will work it intensively and intelligently.

You must sell a good truck, of course, one that will meet your customers' needs and give lasting service. And, remember, at least 65 per cent of them are best served by the *one-ton speed truck.*

THE EATON AXLE COMPANY
CLEVELAND, OHIO

SPEED TRUCK

AXLES

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

No backlash—no jerks or rattles

Why 75 manufacturers have adopted the disc of Fanwise Construction

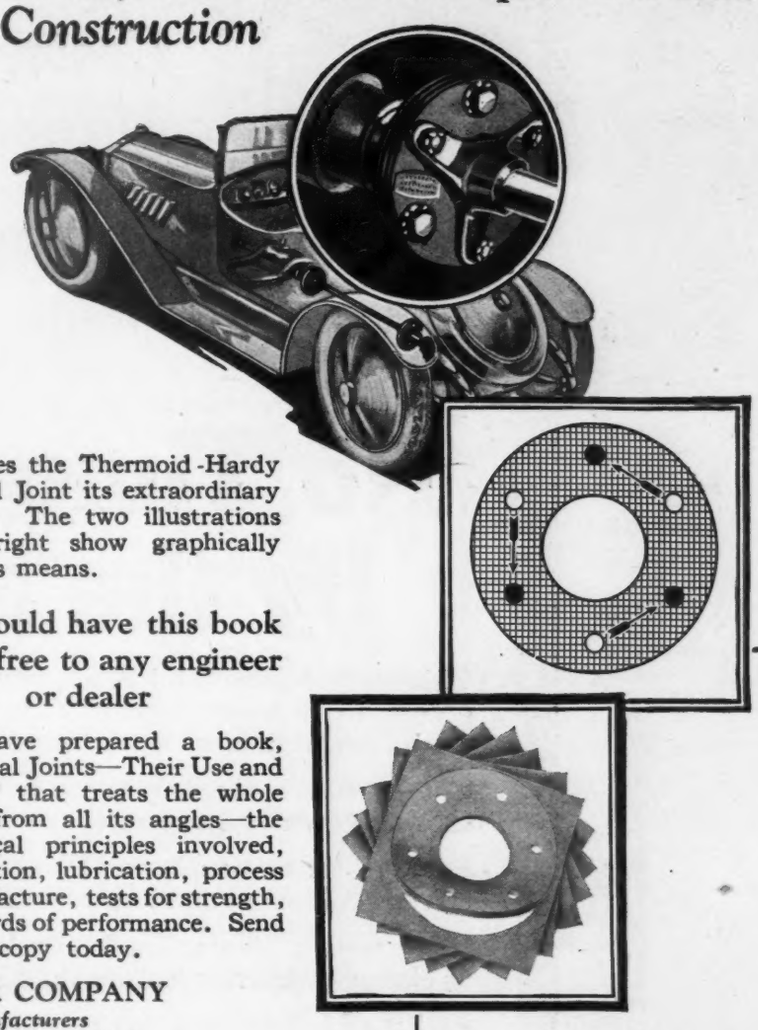
ENGINE running smoothly—plenty of power—and yet jerks, rattles and lost motion in the gears and bearings. Ever since the automobile has been in use—car owners have had this condition to contend with.

Backlash—that's the trouble. It comes from metal universal joints. It is a danger signal. Metal universal joints fail to cushion the shocks of starting, shifting gears, or driving over rough roads. They transmit every blow and jar. They quickly wear loose—causing backlash.

To eliminate backlash and its accompanying troubles the Thermoid-Hardy Universal Joint has been perfected. It is constructed of flexible fabric discs which cushion the racking blows. It transmits a smooth, even flow of power instead of lost motion and rattles. Having no metal-to-metal wearing surfaces the Thermoid-Hardy Universal Joint cannot wear loose. It requires no lubrication—no constant attention.

Fanwise Construction for strength

The patented Fanwise Construction of the flexible fabric discs gives the Thermoid-Hardy Universal Joint its extraordinary strength. The two illustrations at the right show graphically what this means.



You should have this book —sent free to any engineer or dealer

We have prepared a book, "Universal Joints—Their Use and Misuse," that treats the whole subject from all its angles—the mechanical principles involved, construction, lubrication, process of manufacture, tests for strength, and records of performance. Send for your copy today.

THERMOID RUBBER COMPANY
Sole American Manufacturers
Factory and Main Offices: Trenton, N. J.
New York Chicago Los Angeles Detroit Cleveland Seattle Atlanta Boston London Paris Turin

THERMOID-HARDY
UNIVERSAL JOINT

Fanwise Construction for strength
Makers of "Thermoid Hydraulic Compressed Brake Lining" and "Thermoid Crolide Compound Tires"

AT the top is an ordinary disc, its layers of fabric laid parallel. The three black holes are the driving bolts—the three white ones the driven. Notice that the left-hand driving bolt is the only one that can pull in the direction of the strands of cotton. The other two must pull on a bias. This stretches the whole disc out of true, causing vibration and "whipping" of the entire shaft

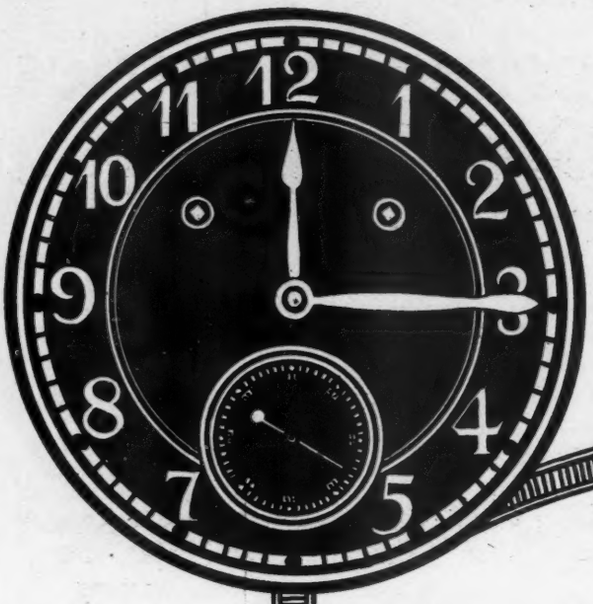
In contrast, examine the Thermoid-Hardy patented Fanwise Construction. Notice how the disc is built up with the strands of each layer of fabric running in a different direction. Each sector is of uniform strength and elasticity. Every stress is balanced—

—the torsional stresses between the bolt holes
—the centrifugal stresses from the center outward
—the lateral stresses from the forward and back motion of the shaft.

This means the elimination of "whipping" and vibration. It means that the shaft is held in true on every revolution.

LIST OF USERS

American British Mfg. Co.
Allis Chalmers Mfg. Co.
Anderson Motor Co.
The Autocar Co.
Available Truck Co.
Barley Motor Car Co. (Roamer)
Crow-Elkhart Motor Corp.
Jas. Cunningham Son & Co.
Dart Truck & Tractor Corp.
The Dauch Mfg. Co.
Diamond T Motor Car Co.
Doane Motor Truck Co.
Elgin Motor Car Corp.
Elgin Street Sweeper Co.
Fageol Motors Co.
Fifth Ave. Coach Co.
H. H. Franklin Mfg. Co.
Garford Motor Truck Co.
Gramm-Bernstein Motor Truck Co.
Handley Knight
Hawkeye Truck Co.
Hendrickson Motor Truck Co.
Highway Motors Co.
Holt Mfg. Co.
Indiana Truck Co.
International Harvester Co. of A., Inc.
International Motor Co.
Jackson Motors Corp.
Kelsey Motor Co.
Kentucky Wagon Mfg. Co., Inc.
Kenworthy Motors Corp.
King Motor Car Co.
King Zeitler Co.
Lakewood Eng. Co.
Larrabee-Deyo Motor Truck Co.
Lexington Motor Co.
Locomobile Co.
Menominee Motor Truck Co.
Mercer Motors Co.
Moreland Motor Truck Co.
McFarlan Motor Co
Nelson & LeMoon
E. A. Nelson Automobile Co.
Nelson Motor Truck Co.
D. A. Newcomer Co.
O'Connell Motor Truck Co.
Oliver Tractor Co.
Oneida Motor Truck Co.
Packard Motor Car Co.
Parker Motor Truck Co.
Patriot Motors Co.
Reliance Motor Truck Co.
Rec Motor Car Co.
Reynolds Motor Truck Co.
Root & Van Dervoort Eng. Co.
Sanford Motor Truck Co.
Southwark Fdy. & Mach. Co.
Sprague Electric Co.
Stoughton Wagon Co.
Studebaker Corp.
Stutes Mar Tractor Co.
Templar Motors Co.
Tioga Steel & Iron Co.
Towmotor Co.
Traffic Motor Truck Corp.
Transport Truck Co.
Twin City Four Wheel Drive Co., Inc.
United Motors Co.
Walter Motor Truck Co.
Ward La France Truck Corp., Inc.
Watson Products Corp.
Geo. D. Whitcomb Co.
Wichita Motors Co.
H. E. Wilcox Motor Co.
J. C. Wilson Co.
Willys-Overland, Inc.
Zeitler & Lamson
Truck & Tractor Co.



The Time Trucks Waste in Repair Shops Costs Truck Owners Millions of Dollars Yearly

No Time Wasted by the MACCAR

Think of the huge total it costs truck owners yearly in cancelled orders, in delayed shipments, in loss of good-will, when their trucks waste time in repair shops—for power-plant overhauling.

The Maccar is the only truck on the market that never wastes time on power-plant repairs.

Why? The Maccar Power Plant is Demountable. As a *unit* it can be replaced in 30 minutes—or less.

If you were a Maccar Dealer, couldn't you see how this one overwhelmingly superior feature would lift you above competition?

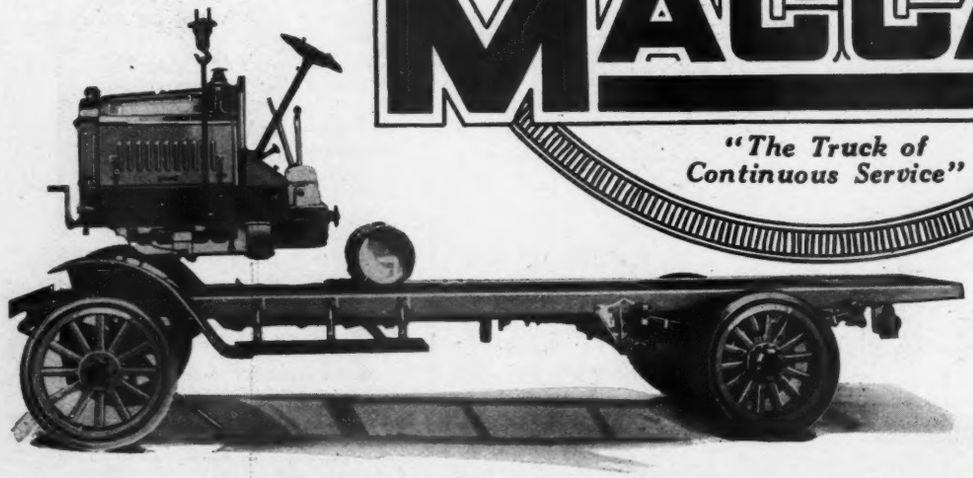
And the Maccar has other noteworthy selling advantages.

The complete details are yours for the asking. *Write.*

Maccar Truck Company
Scranton, Pa.

MACCAR

"The Truck of Continuous Service"



THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

EYES

For the Truck You Represent

When, in the murky blackness of the night, your customer's truck crashes into an obstruction—will he hold you responsible?

If the accident is due to the lamps' feeble light, which failed to show the way to safety—he will very likely hold you responsible.

See to it then that your truck comes from the factory equipped with Victor Lamps, either gas, oil or electric.

The broad beams from these massive, man-size lamps easily pierce the inkiest darkness. Provide positive safety at high speeds. Keep your customer's upkeep down—by keeping his truck in continuous operation, if necessary. ***And help make truck sales easier for you.***

See to it that the truck you represent has EYES—Victor Lamps.

SPECIFY THEM

The Corcoran Victor Company

Reading Road, Cincinnati, Ohio

Export Office:
30 Water Street
New York, N. Y.

Cable Address:
Widbloco
New York, N. Y.

Victor Lamps

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TORBENSEN AXLES

Tens of thousands of Torbensen Axles are in use on Trucks all over America. Torbensen is indisputed leader in the speed truck field, 40,000 such trucks being Torbensen equipped. The wide use of Torbensen Axles results from advantages which are as clear as daylight. The Torbensen Axle is lighter, yet the strongest axle made for given capacity. It delivers more power to the driving wheels. It saves the truck, and it saves gasoline. It is fully enclosed—protected from grit and dirt.

TORBENSEN AXLE COMPANY
CLEVELAND, OHIO

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Two Fast-Selling Firestones

The Heavy Duty Cushion and Truck Type Cord Tire

As the season progresses the success of the Firestone Heavy Duty Cushion and the Firestone Truck Type Cord becomes more and more pronounced.

It is inevitable that these two important types should mean bigger business to the dealer who offers them to users in his locality.

Both have given proof of superiority in their field. Each is adaptable to a wide range of use. They are being widely advertised and their mileage favorably discussed everywhere.

They will bring you more sales. Ask a Firestone salesman to tell you about their special features.

Most Miles *per* Dollar

Firestone

TRUCK TIRES

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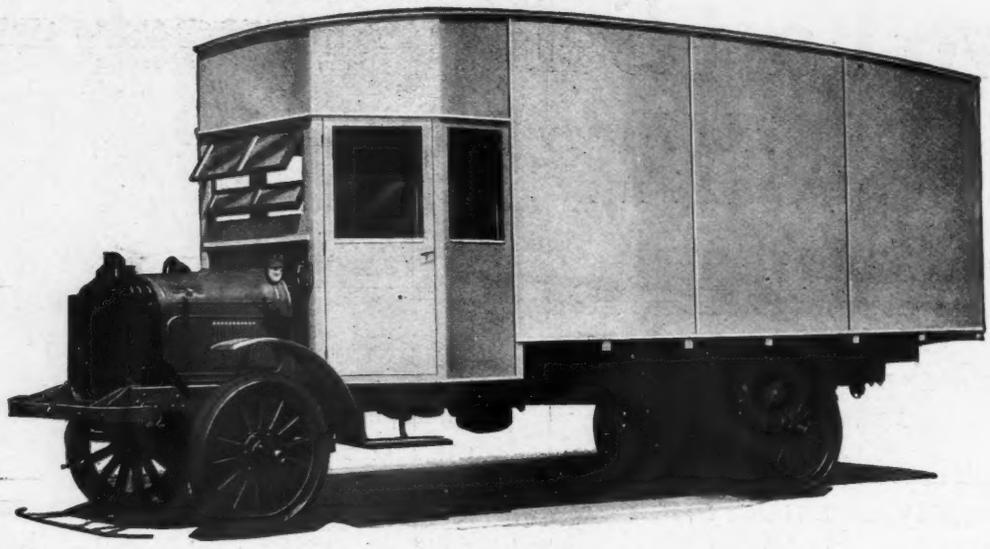

Here is a Moving Van that is guaranteed. On the interior you are unable to find a bolt or projection of any kind. This Moving Van is constructed on the most scientific principles.

Specifications of Standard Moving Van

LENGTH OF BODY OVER ALL—19½ feet.

LENGTH OF BODY INSIDE—15 feet back of driver's seat.

WIDTH OF BODY OVER ALL—7 feet.

WIDTH OF BODY INSIDE—6½ feet.

HEIGHT OF BODY OVER ALL—7 feet, 3 inches.

HEIGHT OF BODY INSIDE—7 feet.

SILLS—Sled-runner type, adjustable to any width of frame, made of 2¾" x 5" oak.

CROSS MEMBERS—Seven in number, of 2¾" x 5" oak, bolted to sills with 2" angle iron.

PILLARS OR SIDE BRACES—of 1½" x 2¾" oak, spaced 27" apart, bolted to side sill, reinforced by ½" x 1½" iron running upright 36" to the sides and 24" on the bottom, bolted to cross member, preventing rack or strain on body.

REAR END—of closed construction. Tail gate, lower half drop, made of 1¼" maple, tongue and grooved, supported by cross members and three heavy malleable hinges running full width of gate. Heavy malleable loops and eyes, with 16 feet of heavy chain. Upper half, two hinged doors, wood frame and sheet metal covering; closed by automatic lock.

ROOF—Oak ribs, 1½" x 1½", spaced 18" apart, reinforced to canopy by heavy, malleable corner irons. Deck slatted and covered with No. 10 black oiled duck.

INTERIOR—Sides neatly slatted, slats 4" and 6" wide, floor of 1⅛" maple; the entire interior construction being devoid of any projecting or protruding irons, bolt heads or nuts.

EXTERIOR—Sides of ¼" x 3 ply water-proof panels, glued and nailed with cement-coated nails; all joints neatly moulded.

CAB—Embodied in van, four-man capacity, exterior covered with sheet metal, all windows of a drop sash nature, windshield of the double-ventilating type. High-grade cushions and spring lazyback supplied.

PAINTING—One coat of lead prime exterior.

MOUNTING—When chassis is driven to our plant, we make no charge for mounting.

The General Woodwork Co., Inc.

Cincinnati, Ohio

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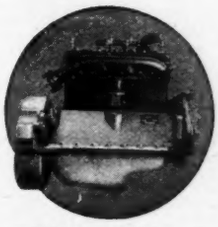
Buda-equipped "R & L" taxicab built by Rauch & Lang, Inc., Chicopee Falls, Mass

Make Buda Power your partner in success



BUILT FOR A PURPOSE

Buda power will help your truck, taxicab or motor coach keep faith with the buyer. The Buda is powerful and sturdy, quiet running and economical. Its every fine quality is the result of years of specialization in the production of heavy-duty engines. The fact that Buda parts service is available all over the country is another important item which helps win and hold sales for Buda-powered vehicles.

THE BUDA COMPANY, HARVEY CHICAGO SUBURB ILL.
ESTABLISHED 1881

BUDA
The
ENGINE

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This Worldwide Preference Means Profits to Dealers

LISTED below are passenger car and truck manufacturers, both American and European, who use Zenith carburetors as standard equipment. ¶ This overwhelming preference is accurately reflected in the carburetor replacement business, which is responsible for the prosperity of Zenith dealers everywhere. ¶ Some good territories are available for the right men. Write today for our proposition.

Irrefutable Proof of Zenith Supremacy

PASSENGER CARS

United States
Anderson
Brewster
Chalmers (export)
Chevrolet
Comet
Crow-Elkhart
Daniels
Driggs
Elgin
Fox
Hatfield
Kurtz Automatic
Maxwell (export)
Meteor
Monroe
Noma
Norwalk
Oldsmobile
Ranger
Romer
Standard Eight
Tulsa
Wills St. Claire
Washington
Yellow Cab

France
Alba
Aries
Ballot
Beck
Bazelaire
Bedelia
Bellanger
Benjamin
Bignan
Brasier
Bugatti
Charron
Colda
Corre-la Licorne
Cottin Desgouttes
Crespelle
DeDion Bouton
Delage
Delaugere Clayette
Doriot-Flandrin & Parrant
Farman
Gobron
Gregoire
Hotchkiss
Irat
La Buire
Leon Bollee
Lorraine Dietrich
Mors
Motobloc
Mourre
Paquis
Paulet
Peugeot
Philos
Rauch Lang (taxi cab)
Rochet-Schneider
Rolland Pilain
Roy
Salmson
Th. Schneider
Sidea
Sigma
Slim
Soriano-Pedroso
Turcat Mery
Vermorel
Vinot-Deguingand
Voisin
Zebre
Zedel

England
A. B. C.
Angus Sanderson
Argyll
Arol Johnston
Austin
Beardmore
Belsize
Blackburn
Briton
B. S. A.
Calcott
Calthorpe
Charron Laycock
Cluley
Enfield Allday
Ensign
Galloway
Guy
Hampton
H. E.
Hillman
Jowett
Lagonda
Orpington
Palladium
Phoenix
Ruston Hornsby
Standard
Star
Swift
Talbot
Vauxhall
Vulcan
Waverly

Germany
Adler
Audi
Beclowen
Benz
Benz-Sochne
Dux
Elite
Horch
Joswin
Ley
N. A. G.
N. S. U.
Protos
Richard & Hering
Simson
Steiger
Stoewer
Szawe
Wanderer

Belgium
Abadal
Belga
d'Acoust
Dasse
F. N.
Metalurgique
Minerva
Niesse
Nagant
Pipe
Somea

Italy
Alfa Romeo
Ansaldo
Bianchi
Chiribiri
Diatto
Isotta Fraschini
Itala
Lancia
Nazzarro
S. C. A. T.
Spa

TRUCKS

United States
Abbot-Downing
Acme
American
American Motorbus
Armleder
Atlas
Atterbury
Beaver
Belmont
Bethlehem
Biederman
Bridgeport
Buffalo
Casco
Clydesdale
Collier
Commerce
Dart
Day Elder
Dearborn
DeMartini
Dependable
E. A. Denz
Double Drive
Eagle
Elgin St. Sweeper
Facto
Fageol
Federal
5th Ave. Coach Co.
Forschler
Godfredson-Joyce
Hahn
Hall
Harmer-Knowles
Hawkeye
Hercules
Higrade
Huffman
Hug Co.
H. R. L.
Huron
Indiana
J. T. Tractor
Koehler
Kelly-Springfield
Kerns Dughie
Keystone
Kimball
Krebs
Larrabee-Deyo
Maccar
Mack
Massey-Harris
Moreland
Municipal Supply Company
National
Nelson
New England
Northway
Norwalk
Oklahoma
Olympic
Oshkosh
Penn
Perfection
Power
Rainier
Ranger
Rowe
Samson Tractor
Sanford
Schacht
Southern
Sterling
Stewart
Stoughton
Sullivan
Tower
Towmotor
Traylor
Triumph
Veteran
Vim
Wachusetts
Walker-Johnson
Watson
White
Witt-Will

England
A. E. C.
Albion
Austin
Beardmore
Belsize
Daimler
Enfield Allday
Guy
Halley
Hallford
Karrier
McCord
Marathon
Mandslay
Pagefield
Palladium
Scrammell
Star
Tilling Stevens
Vulcan

France
Aries
Cottin Desgouttes
DeDion Bouton
Peugeot
Rochet-Schneider
Saurer

Italy
Spa

Switzerland
Berna

Germany
Adler
Benz
Horch
N. A. G.
Richard & Hering

ZENITH CARBURETOR COMPANY, DETROIT, MICHIGAN

Factories at: DETROIT LYONS LONDON TURIN BERLIN

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QUALITY SNAP RINGS

"Fast to Fast"

Easy to Install
Quick Seating
Long Lived
Accurate

During June—
2,607,743 QUALITY Piston Rings were manufactured and shipped—an average of 11,352 rings each and every working hour.

This overwhelming preference for better piston ring service should influence all manufacturers and jobbers who profit by the experience of others.

More Than a Million a Month

THE Piston RING COMPANY
MUSKEGON, MICH.

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You Can Stake Your Reputation on Them

Your reputation as a motor truck manufacturer, distributor or dealer is the net result of the performance of the motor truck that you build or represent. It is, therefore, an imperative necessity that the units in your truck be of such superior caliber that they enable it to earn the appreciation and good-will of His Majesty—the Buyer.

If you select Spring-Perch Springs, you will have the assurance of dependable spring operation, under all conditions, as long as your trucks are on the roads.

For nearly eighty years this organization has been making springs. We have followed the steady development of transportation in all its phases, up to the present development of the motor truck.

Today, our Spring Engineering Experts stand ready to assist in designing the proper Spring-Perch Spring for your particular motor truck.

COMPOUND SPRINGS FOR BUS SERVICE

Suitable for Their Greatly Varying Load Conditions

BANDED SPRINGS FOR TRUCKS

Especially Desirable for Hotchkiss Drive. Special Designs for Speed Wagons

SPRING PERCH COMPANY

Makers of Springs Since 1843

STRATFORD CONNECTICUT

SPRING-PERCH

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WHAT PRESENT SIGNAL PRICES ACCOMPLISH:

1. ***Reduce sales resistance, thereby increasing dealers' business.***
2. ***Users quickly recognize greater money value.***
3. ***Place Signal dealers in an enviable position as to competition.***

All kinds of trucking conditions interest the Signal dealer, as the line he sells is COMPLETE. The fast, light job for quick delivery or the heavy, steel giant that handles tons with wonderful ease.

Model NF, 3800 lb. Capacity
30 horsepower, 132" wheelbase, 34 x 5 front, 36 x 6 rear, cord pneumatic tires. Chassis with seat $1450.00

Model H, 5000 lb. Capacity
35 horsepower, 146" wheelbase, 34 x 4 front, 36 x 6 rear, solid tires. Chassis with seat $1950.00

Model J, 7200 lb. Capacity
40 horsepower, 150" wheelbase, 34 x 4 front, 36 x 8 rear, solid tires. Chassis with seat $2375.00

Model M, 9750 lb. Capacity
45 horsepower, 168" wheelbase, 36 x 5 front, 40 x 10 rear, solid tires. Chassis with seat $3175.00

Model R, 15,000 lb. Capacity
50 horsepower, 180" wheelbase, 36 x 6 front, 40 x 12 rear, solid tires. Chassis with seat $3900.00

All Quoted Prices Are for Chassis in Lead Paint F. O. B. Detroit. Federal Tax Additional

SIGNAL TRUCK CORPORATION
DETROIT MICHIGAN

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

TODAY critical motor car or truck buyers ask, "Who builds the vital power-transmitting and load-carrying parts?" The mention of Spicer, or Sheldon, or Parish, or Salisbury, counts heavily in establishing assurance of quality and closing the sale.

Sheldon Axle and Spring Co. - - Wilkes-Barre, Pa.
Parish Mfg. Corp. - - Reading, Pa., and Detroit, Mich.
Salisbury Axle Company - - - Jamestown, N. Y.
Spicer Mfg. Corporation - - South Plainfield, N. J.

C. A. DANA, *President*

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Ignition Can be a Help or a Hindrance

Trade-Mark Reg. U. S. Pat. Off.

Trade-Mark Reg. U. S. Pat. Off.

A motor truck is easier to sell if it has Bosch Magneto Ignition

Truck owners and drivers everywhere recognize in Bosch an ignition system which insures the greatest possible power, efficiency and dependability in an engine. Therefore, when they see a truck Bosch-Equipt they accept it as a thoroughly dependable product.

Don't curtail sales by handling a truck with ignition which buyers either do not know or do not trust.

Tell your truck manufacturer to use Bosch Magneto Ignition. Its three million users, its unparalleled reputation for dependable service, its five hundred service stations and its huge advertising campaigns are the biggest selling assets you can have. No other ignition manufacturer can furnish aids of their size and strength. See that you get all of these Bosch assets on the truck you sell.

Be Satisfied *Specify Bosch*

Over 500 Service Stations in 500 Centers

American Bosch Magneto Corporation

Main Office and Works: Springfield, Mass.

Branches: New York, Chicago, Detroit, San Francisco

BOSCH

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When you see a tapered roller bearing with rollers that are concaved at one end and flush at the other, that bearing, you may be certain, is a—

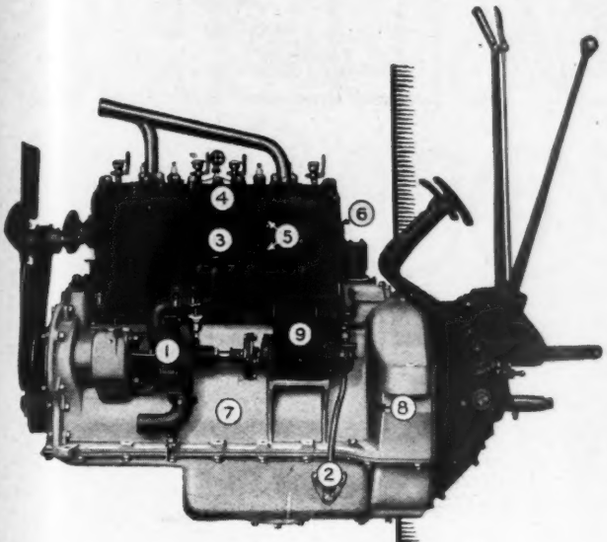
GILLIAM TAPERED ROLLER Bearings

The Gilliam Mfg. Co., Canton, Ohio

ALLOY Steel THROUGHOUT

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Specialized Truck Building Practice Insures the Superior Performance of the



FEDERAL *Fast Express*

Note the sturdy truck-type engine of this new Fast Express. Similarly designed for maximum strength and enduring service is its Timken Worm and worm-wheel drive; its staunch transmission; its heavy Borg & Beck clutch; its reliable Gemmer Steering Gear.

The frame is five inches deep; the springs are of chrome vanadium steel; the brakes are fifteen inches in diameter; the propeller shafts are unusually large; five inch tires are standard equipment.

It is these exclusively Federal features that make the Fast Express superior for the rapid, certain and economical transportation of light-delivery load. *Compare it*—and you will *buy it.*

FEDERAL MOTOR TRUCK CO.
Detroit, U. S. A.

1 Centrifugal pump circulation, with scientifically designed water jackets, insures ideal and uniform cooling of motor at all times.

2 Gear driven oil pump with steel lined main and auxiliary oil passages to all bearings insures continuous and proper lubrication of all moving surfaces; reducing friction, minimizing wear and promoting quiet.

3 The four gray iron cylinders are cast en bloc, of uniform metal thickness.

4 The gray iron cylinder head is removable, making it easy to scrape carbon or grind valves. It is held firmly and evenly against the copper asbestos gasket by 18 studs. Four lifting lugs simplify its removal.

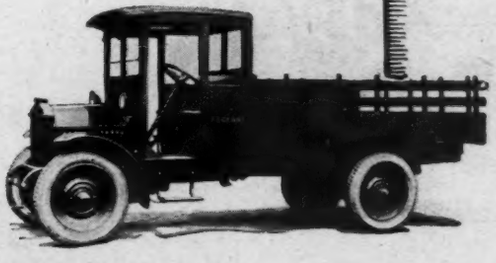
5 Throughout this sturdy Continental engine all reciprocating parts are of sufficient size for heavy duty work, but not too heavy for accurate balance and quiet operation.

6 The inlet and exhaust manifolds are grouped in a single casting. Its unique design with an adjustment, insures correct temperature at all seasons of the year.

7 The aluminum crank case is designed and built to insure a surplus of tensile strength with light weight.

8 The crank shaft is scientifically designed, highly refined and perfectly balanced. Special machinery attending every part of its manufacture eliminates all possibility of distortion and misalignment.

9 The Eisemann magneto, insuring a hot spot at all times, provides a most efficient and dependable system of ignition.



Another **FEDERAL**

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

WHERE ARE THE RIGHT DEALERS FOR YOU?

¶ YOU CAN FIND THE KIND OF DEALERS YOU WANT AMONG THE 10,000 TRADE SUBSCRIBERS TO THE

COMMERCIAL CAR JOURNAL

HERE are thousands of men in the trade, either buyers or men who influence purchases, on the lookout for profitable products and salable lines. Many of these 10,000 men can be induced to handle your line in the communities in which they are located. They are the right dealers for you.

The October "Better Dealer" Number of the COMMERCIAL CAR JOURNAL offers you a splendid opportunity to reach these men who control most of the sales in the motor truck field. This powerful issue will create business for those companies that advertise in it as it will influence the men who read it to spread out, to take on more lines, and to do things in a bigger way.

If you need dealers—the right kind—place your product and your sales proposition before 50% of all of them—the better half that subscribe to the COMMERCIAL CAR JOURNAL.

As the final forms close October 8th, we advise immediate space reservation.

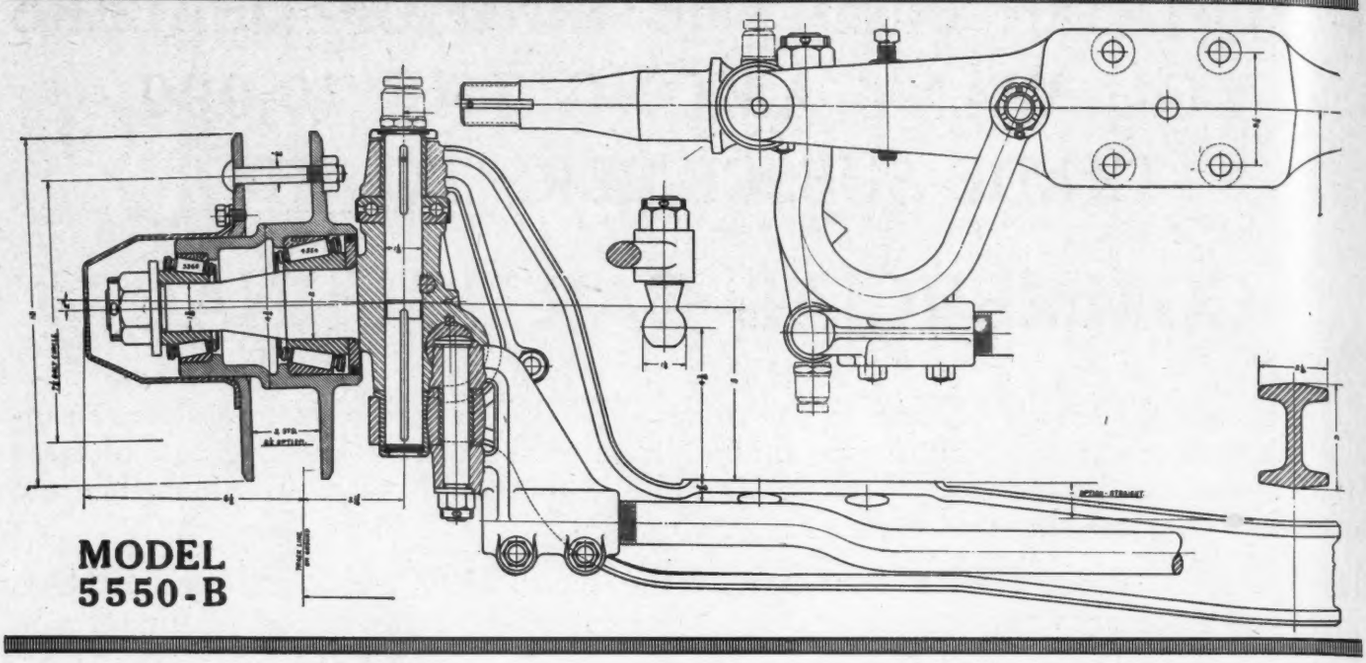
COMMERCIAL CAR JOURNAL

49th and Market Streets Philadelphia, Pa.

The **COMMERCIAL CAR JOURNAL** is the only publication that adequately serves the new giant among industrial enterprises, America's new billion-dollar business, the commercial car industry.

There are 23,971 motor truck dealers in the country, including the 8,748 Ford dealers. The **COMMERCIAL CAR JOURNAL** reaches over half the dealers handling other than Ford trucks. All other truck publications combined do not equal this record.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION



SHULER FRONT AXLES

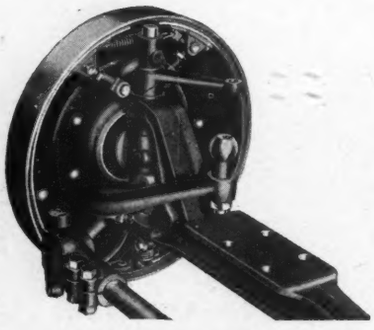
This New Model, Designed Especially for High-Speed Interurban Motorbuses, Meets Every Requirement

The rapid development of interurban motorbus transportation has created manufacturing problems that cannot be met successfully with units designed primarily for other service. SHULER early recognized this fact and has developed specialized front axles that meet exactly the new requirements.

Model 5550-B, though designed for the comparatively light work of the high-speed interurban motorbus of 18 to 25 passenger capacity, is heavy and sturdy enough in construction to provide an unusual degree of safety. The axle center is S. A. E. Spec. 1035 30–40 carbon steel, drop-forged in one piece and thoroughly heat treated. Steering knuckles and arms are S. A. E. Spec. 3135 chrome nickel steel, drop forged and thoroughly heat treated. Ball thrust bearings are used in the knuckle heads to insure easy steering. Timken tapered roller bearings are standard wheel-bearing equipment.

A five-inch drop from spindle line to spring pad permits a floor height of only 26 inches, and yet gives ample road clearance. The lowering of floor and steps made possible by using Model 5550-B insures easier, safer and quicker loading. The exceptionally wide tread-range of 56 to 68½ inches permits a wide body floor, which, together with the low center of gravity, guarantees maximum stability in operation.

Heavier models of substantially this same new SHULER FRONT AXLE are available for motorbuses of larger size and greater passenger capacity. Detailed information and specifications will be forwarded on request.



Shuler Front Wheel Brake

permits simultaneous braking on all four wheels, brings tremendous factor of added safety and practically eliminates danger of skidding. The SHULER FRONT WHEEL BRAKE is designed into the standard line of SHULER FRONT AXLES for Motorbuses, Motor Trucks and Trailers. Manufacturers are invited to write us for more detailed information.

We solicit correspondence with manufacturers of motorbuses, motor trucks, trailers and tractors, with a view to offering our co-operation in designing SHULER AXLES into your specifications. We make front axles exclusively.

SHULER AXLE COMPANY

INCORPORATED

Front Axles for Trucks, Tractors and Trailers

3003 Jones Street Louisville, Kentucky

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

They gave it the "Third Degree"

They Picked Their Roughest Driver to Test It!

The Miller North Broad Storage Co., of Philadelphia, wanted to find out what the Traylor Hiflex Spring Suspension would accomplish on their fleet of motor trucks.

They resolved to give it the "third degree."

The hardest driver in their employ was told to climb aboard a Hiflex-equipt truck and to "let her rip" over the worst road that could be found. This man was a confirmed spring breaker. He drove at a high rate of speed over a terrible stretch of roadway and couldn't even loosen a bolt. "It's like riding in an automobile," was his description of a ride at top speed in a solid-tired truck over rutty roads. Naturally the company installed the Suspension.

Your dealers have many prospects in their territories like moving companies that carry fragile or perishable loads that they could sell more readily if your motor truck was Hiflex equipt.

Above the Suspension no vibration can pass.

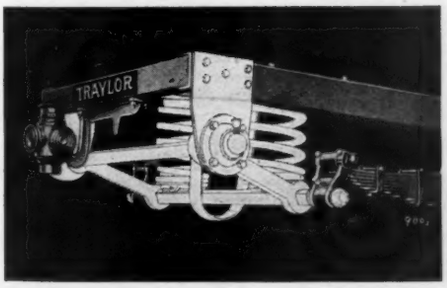
Both the body and the load ride cushioned against the jars of traction.

Consider what that marvelous invention on all your models would mean to your dealer organization.

Write us for complete information. We are capable of supplying our Suspension to you in practically any quantities.

Traylor Engineering and Mfg. Co.
Cornwells Heights, Pa.

Other Factories at Philadelphia and Allentown



Traylor Hiflex SPRING SUSPENSION

Makes a Solid Tire Truck Ride Like a Touring Car

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

This Announcement is the ***SECOND*** *of Series Introducing the*

PYRAMID
TRADE MARK

MECHANICAL HOIST-WINCH

POWER WINCH FEATURE

Insures Unequalled Performing Ability

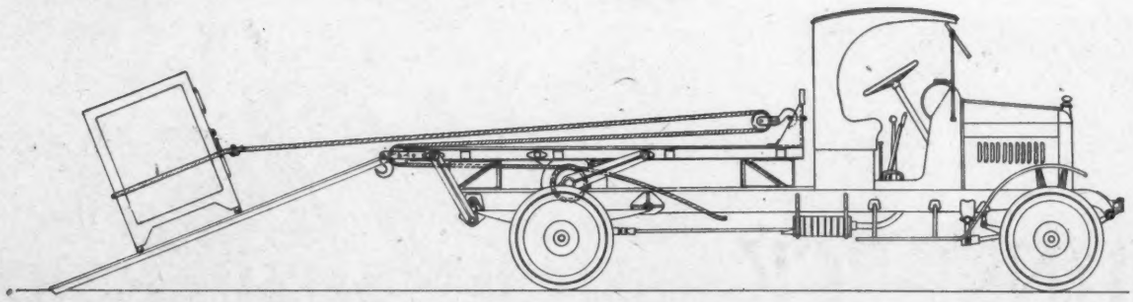
Apart from the Horizontal Displacement Principle, described in the first series of announcements in the June issue of this paper, the PYRAMID MECHANICAL HOIST-WINCH is equipped with a patented Power Capstan or Winch, which forms an integral part of the equipment.

Next to the Dumping Hoist, perhaps the most important auxiliary to a motor truck is a Power Capstan. There is scarcely a truck that has not been at some time or other stuck in the mud, and the time and labor expenditures, due to kindred troubles, in many instances would have justified an investment in a Power Capstan. Unfortunately, however, the Winches and Capstans that are on the market are all designed for special-purpose trucks and, owing to their construction and place of location, are not suitable for Dump Trucks, notwithstanding the fact that in the classes of work that the latter is employed the possibilities for varied uses of a Power Capstan are far greater than in any other truck; this is especially true when the Dumping Truck is equipped with a combination-type body.

DEALERS: You will be greatly interested in checking off the many exclusive *selling* features of this remarkable Hoist-Winch. Better write for full details—*now*.

Pyramid Engineering Corporation

Buffalo, N. Y.



Using the Power-Winch for heavy loading. This is another exclusive and standard feature of the Pyramid Mechanical Hoist-Winch

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Tracking down the wasted dollars

WHEN you go to tracking down waste in your trucking department scrutinize, carefully, the costs of gas, oil, repairs, lost time, depreciation of truck, as well as the per mile cost for tires.

Brunswick's new truck tires — 84% Friction-Proofed — are not only economical in first and last tire expense but we have proved that they actually reduce all other costs of upkeep.

The only way you can check up on this is to keep a close record of costs with your old tire equipped wheels, then install new Brunswick truck tires and watch the expenses go down.

You will soon be satisfied that you are saving money by using Brunswicks on all your trucks.

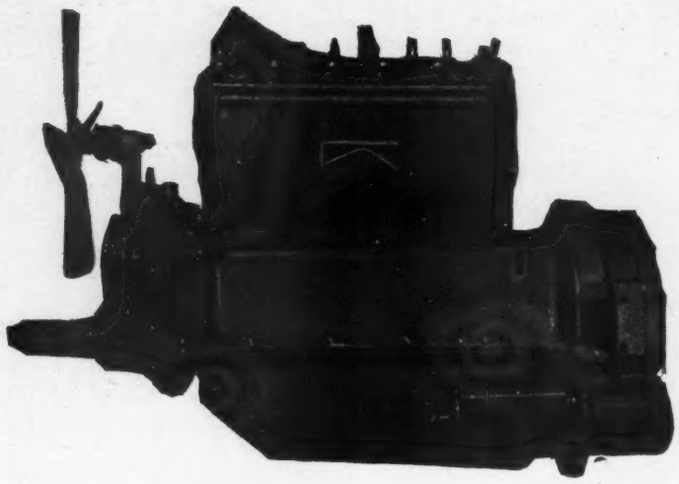
A test is worth a thousand claims. Hence our desire to have you try these new, long-wearing, satisfactory tires, 84% proofed against friction and road burn.

There is a Brunswick dealer in your district whose careful, reliable services we can recommend to you. See him.

BRUNSWICK
TRUCK TIRES

Manufactured by
THE BRUNSWICK-BALKE-COLLENDER CO.
General Offices: 623-633 South Wabash Avenue
Chicago, Ill.
Branches in Principal Cities of the United States

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION



The Ton-Mile Cost of Truck Transportation Depends Upon the Engine Under the Hood

Freedom from the menace of interrupted rapid transportation is each year brought nearer by the increasing use of speed trucks and better roads. The problem of manufacturer and owner, however, continues to centre on the right power plant for the truck.

As in the passenger car, the crucial test of a speed truck is in its engine, which must combine rugged simplicity with economical and dependable operation.

The Lycoming Motor for speed trucks is assurance of these vital essentials to both truck manufacturer and truck owner.

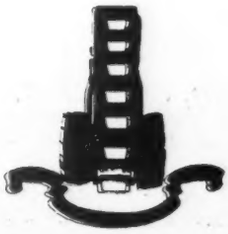
You can easily find out more about this motor by writing to the

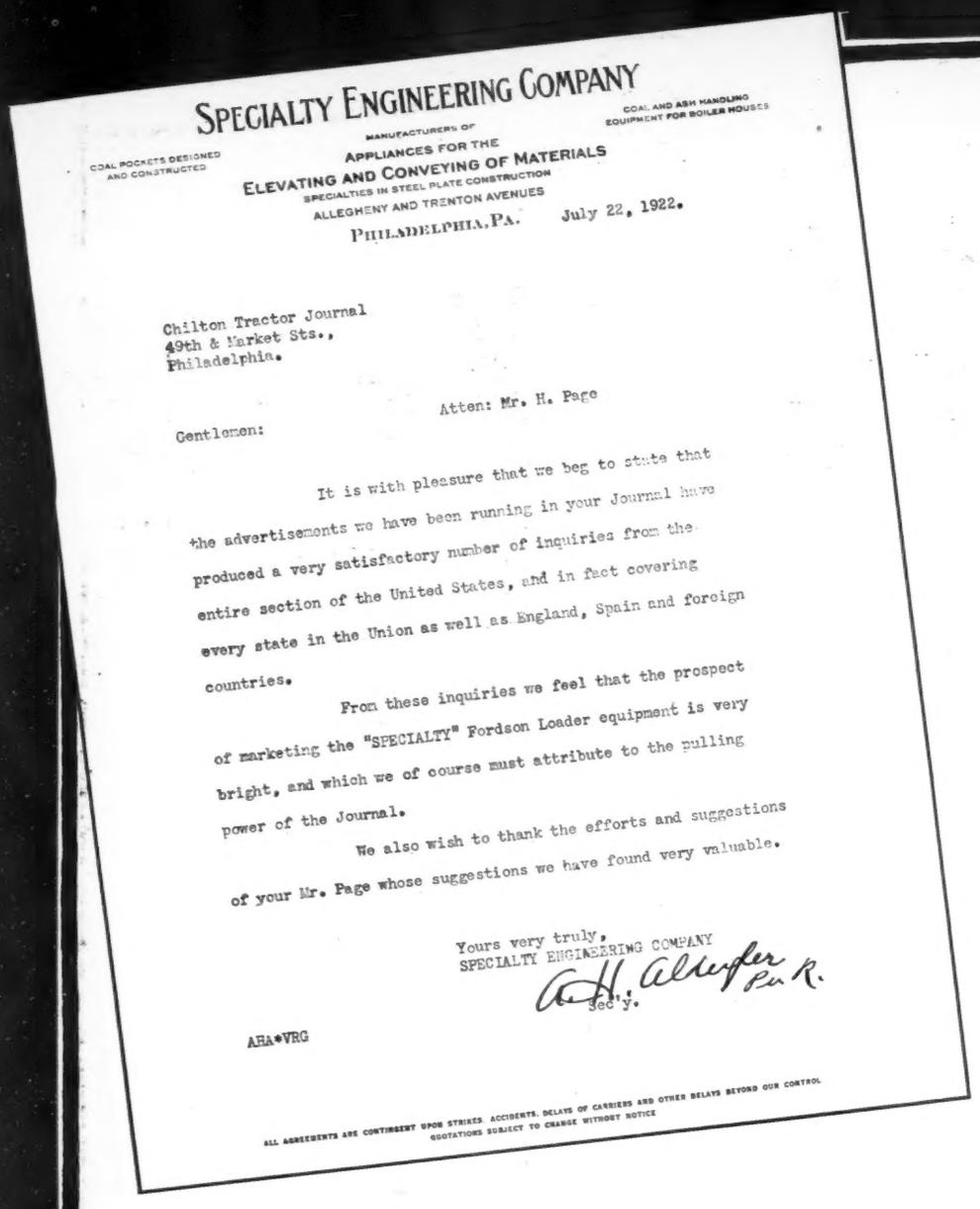
Lycoming Motors Corporation
Williamsport, Pennsylvania

Lycoming MOTORS

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

HOW A MANUFACTURER GOT RETURNS FROM EVERY STATE IN THE UNION





SPECIALTY ENGINEERING COMPANY

COAL POCKETS DESIGNED AND CONSTRUCTED

MANUFACTURERS OF APPLIANCES FOR THE ELEVATING AND CONVEYING OF MATERIALS SPECIALTIES IN STEEL PLATE CONSTRUCTION

COAL AND ASH HANDLING EQUIPMENT FOR BOILER HOUSES

ALLEGHENY AND TRENTON AVENUES
PHILADELPHIA, PA. July 22, 1922.

Chilton Tractor Journal
49th & Market Sts.,
Philadelphia.

Atten: Mr. H. Page

Gentlemen:

It is with pleasure that we beg to state that the advertisements we have been running in your Journal have produced a very satisfactory number of inquiries from the entire section of the United States, and in fact covering every state in the Union as well as England, Spain and foreign countries.

From these inquiries we feel that the prospect of marketing the "SPECIALTY" Fordson Loader equipment is very bright, and which we of course must attribute to the pulling power of the Journal.

We also wish to thank the efforts and suggestions of your Mr. Page whose suggestions we have found very valuable.

Yours very truly,
SPECIALTY ENGINEERING COMPANY
A. H. Allerfer Sec'y.

AHA•VRG

ALL AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS, DELAYS OF CARRIERS AND OTHER DELAYS BEYOND OUR CONTROL
QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

WHEN the Specialty Engineering Company recently perfected an Elevating Loader, mounted on and operated by a Fordson tractor, they faced the problem of how to market this device in a quick and economical way.

The concentrated tractor trade audience of the CHILTON TRACTOR JOURNAL offered the best class of prospects to approach

As the result of three advertisements, inquiries were received from every state in the Union, and from foreign countries. And they are still coming.

"From these inquiries," writes the advertiser, "we feel that the prospect of marketing the Specialty Fordson Loader equipment is very bright, and which we, *of course, must attribute to the pulling power of the CHILTON TRACTOR JOURNAL.*"

THEIR TASK NOW MADE EASIER

With definite inquiries from all sections, this Company will rapidly establish a substantial sales organization. By using the quality and quantity circulation of the CHILTON TRACTOR JOURNAL this concern overcame its most serious problem of reaching the right men to handle its product.

YOU HAVE A SIMILAR PROBLEM

Even though your product is established and you have a capable dealer organization, you wish to open up new accounts and to create new sales outlets. Just as the Specialty Engineering Company found out where interested distributors were located, you can ascertain where the dealers are for you.

CHILTON TRACTOR JOURNAL
June 1, 1922
SHOW CONTRACTORS HOW TO CUT LABOR COSTS
Make a list of the road contractors in your territory. Go to these men and show them how the Specialty Fordson Truck Loader cuts their labor costs. Show them how it can be operated by one man and how it does the work of three or four in less time. Show them how the buckets, operated by endless chains and working on rollers, scoop up all materials used in highway construction and deposit them swiftly and economically into a waiting truck.
This indispensable machine uses the power of the Fordson from the power take-off shaft. The tractor with this loader backs right into the pile. Eighty per cent of the loader's weight rests on the rear axle.
For any aggressive, live dealer who has the ability to sell a valuable product and earn big commissions, this Specialty Fordson Truck Loader offers a big opportunity.
Write for Selling Plans to
SPECIALTY ENGINEERING COMPANY
Allegheny and Trenton Aves.
Philadelphia, Pa.
Specialty FORDSON TRUCK LOADER
July 1, 1922 CHILTON TRACTOR JOURNAL
THIS IS A Specialty
FORDSON TRUCK LOADER ATTACHED TO A FORDSON TRACTOR
Specialty Engineering Company
Allegheny and Trenton Avenues
PHILADELPHIA, PA.
CHILTON TRACTOR JOURNAL
SELL ROAD CONTRACTORS
The Specialty FORDSON TRUCK LOADER
SPECIALTY ENGINEERING COMPANY
Allegheny and Trenton Avenues, Philadelphia, Pa.

These Are the Ads That Brought the Inquiries. All Were Prepared by the CHILTON Advertising Service Department

A Campaign in the CHILTON TRACTOR JOURNAL Will Accomplish This Result

Thousands of tractor dealers read every issue of the JOURNAL. The inquiries received by the Specialty Engineering Company, and by other advertisers, indicate that these men are in the market for new and practical devices. They are on the lookout for products, new or old, that can be sold at a profit. The more than 6000 net paid trade readers of this publication represent the pick of all the tractor trade of the country.

REACH THESE MEN NOW

Each and every issue will impress dealers with the fact that they cannot hope to be successful unless they properly serve their customers. Good service means readiness to repair or replace broken parts and equipment and the ability to supply all of their customers' requirements.

As over 90% of them operate repair shops, this issue offers parts and equipment manufacturers a great opportunity to sell repair and replacement parts.

It affords an equal opportunity to companies selling tractors for all purposes and machinery.

Likewise, it is a sure way to engage the attention of tractor manufacturers who are now considering sources of supply for parts and equipment for their 1923 production.

It also offers an opportunity to reach a wide-awake class of dealers to sell regular lines of farm implements, for these dealers are interested in tractors and their equipment.

SECURE YOUR SHARE OF PROFITABLE INQUIRIES

There are certain well-defined reasons why the Specialty Engineering Company received such gratifying returns from its advertising.

First—This Company used representative space.

Second—The advertising message described the waiting market and made it easy for distributors to visualize the sales possibilities in the communities they serve.

Third—This Company contracted for a year's campaign, and not merely for several page insertions.

"We believe," they stated, "that advertising is cumulative. Like personal selling, it requires continuous effort. We look upon this campaign as an investment in good-will and as a means of familiarizing the trade with our product."

Happily, they secured immediate returns. *But their attitude toward advertising was fundamentally right.*

WHAT HAVE YOU TO SELL THE TRACTOR INDUSTRY?

It is possible for you to duplicate the success of the Specialty Engineering Company if you will follow the few simple rules outlined above. Contract for representative space. Show dealers the market for your product. Tell them how to sell it to the best advantage. Resolve to advertise continuously for a year in the leading tractor publication. We will prepare your copy, if desired.

Take advantage of this opportunity. Act at once and reserve space in the November issue. Copy required by October 15th.

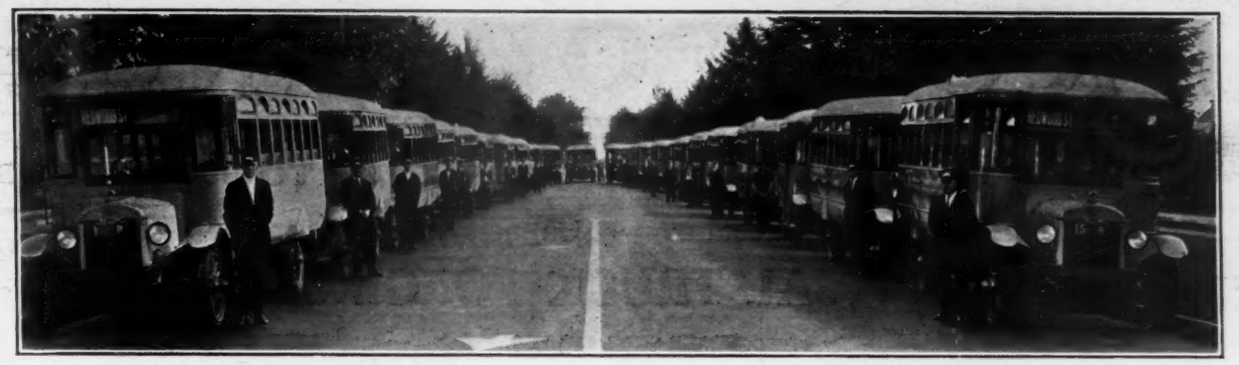
CHILTON

TRACTOR

JOURNAL

Reaches the Dealer Handling Tractors, Machinery, Farm Implements and Equipment for All Tractor Purposes

Market and 49th Sts., Philadelphia, Pa.



This Fleet of 27 Republic-Knight Motored Buses, Operated by the United Railways & Electric Co., in Baltimore, Maryland, is Equipt With FULLER BUS TRANSMISSIONS and CLUTCHES

Fuller-Equipt! When the United Railways & Electric Co. decided to run buses in Baltimore, Md., it made sure of one thing: That every unit of the buses it ordered was built specifically for the gruelling work of bus transportation. Naturally, the incorporation of quality FULLER BUS TRANSMISSIONS and CONTROLS in the quality Republic Bus assembly, helped powerfully to make the sale.

Fuller & Sons Manufacturing Company, Kalamazoo, Michigan

NEW YORK DETROIT SAN FRANCISCO LONDON

FULLER BUS TRANSMISSIONS AND CONTROLS

Motorized Passenger Transportation

EFFECTED BY THE

"IMPERIAL OMNIBUS"

Low Cost of Operation Makes for Increased

EFFICIENCY

Dealer Opportunities

Low Depreciation Offers Increased Opportunity to Bus Operation

PROFITS

Why Not Investigate?

Trackless Transportation Corporation

300 MADISON AVENUE, NEW YORK CITY

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

DROP FORGINGS

BACKED BY FORTY YEARS' EXPERIENCE

ANYTHING THAT CAN BE DROP-FORGED UP TO 300 POUNDS

Open Hearth or Alloy Steel Capacity, 1,800 Tons Per Month

TYPICAL TRUCK FORGINGS

STEERING KNUCKLE, 28 LBS.

BRAKE SHOE, 30¼ LBS.

AXLE SPINDLE, 42 LBS.

STEERING KNUCKLE, 39 LBS.

STEERING KNUCKLE, 35 LBS.

Heat-Treating and Complete Laboratory Equipment

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA. (2 Miles East of Pittsburgh)

GREATER·PROFITS·ON·EACH·SALE

SELL YOUR TOWN OR CITY YOUR TRUCK EQUIPPED WITH CHILDS APPARATUS

What kind of fire-fighting facilities does your municipality possess? If you don't know, investigate. Find out if it isn't possible to greatly improve them with the combination of ***your motor truck*** and Childs' Motor Fire Apparatus. Then sell that combination to the local authorities.

If you will do this, you will make a greater profit for your efforts than you will by simply selling a motor truck; you will secure a business advertisement that will direct other sales your way; and you will really render your community a valuable service.

Let us send you our catalog and complete details about our new selling plan for Motor Truck Dealers in 1922.

FOAMITE-CHILDS CORP.
UTICA, N. Y.

Reo Triple Pumper
Our Newest Combination

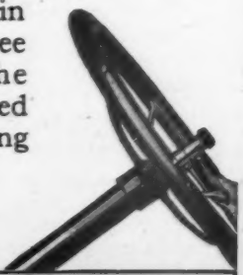
THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

"Rifled" Like the French 75

ORDNANCE accuracy, in machining and fitting, has had much to do with the Lavine's fine service record in the truck field. No gear is better than its parts.

Lavine sliding heads are special analysis steel, hardened and ground. They are cut with the same buttress thread used on the breech-block of the famous French 75 gun—in fact, former "75" makers superintend their machining.

Unusual, of course. But the Lavine throughout is an unusual gear—a gear of a dozen extra-quality features—a gear that sets new standards of durability, simplicity, safety and ease of adjustment. Silky smooth in its action, permanently free from rattling—yet the Lavine is no higher priced than many inferior steering gears.

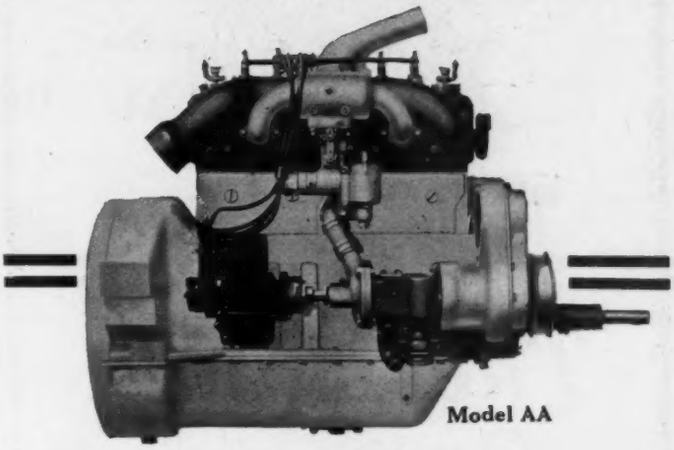


LAVINE STEERING GEAR

Manufacturers: There is a Lavine Gear for every car, truck, bus or tractor. Send us your blueprints and we'll quote on your requirements. No obligation to you, of course.

LAVINE GEAR COMPANY
Milwaukee Wisconsin

Model AA
G. B. & S. MOTOR



Model AA

Attractively Priced

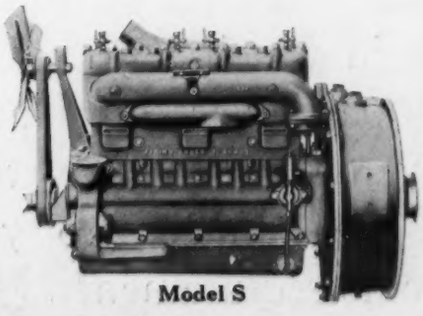
Replaces Continental N-3¾" x 5"

To truck manufacturers and dealers who have experienced difficulty in getting this size motor, this announcement will be welcome news.

The G. B. & S. AA Motor can readily be installed—without change of fitting dimensions—on all trucks that accommodate the Continental N-3¾" x 5".

Of course, the AA Model is built throughout in the quality way for which all G. B. & S. Motors are famous. It's a husky 4 cylinder engine, with cylinders cast en bloc; enclosed valves; hot spot manifold; all aluminum base; pressure feed lubrication—and all other details equally high grade.

Prompt action is advised, as the number of motors in stock is limited.



Model S

Model S Also Available

Model S, 3¾" x 4¼", with 3 bearing crankshaft, detachable cylinder head, and many other sound engineering features, is also available—at a distinctly *low* price. *Write at once.*

Golden, Belknap & Swartz Co.
DETROIT, MICH.

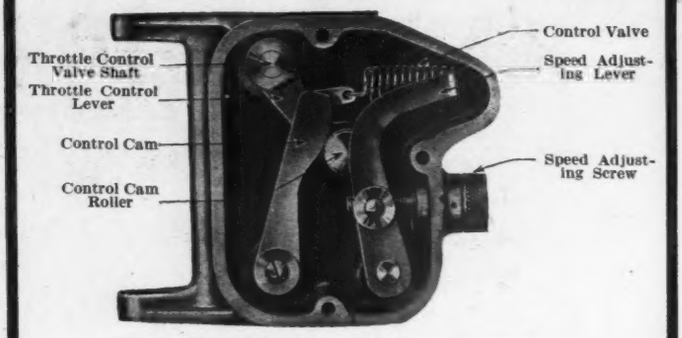


Illustration of Governor With Cover Removed

The Handy Governor

is the most successful governor for truck and tractor use. 65,000 in actual service.

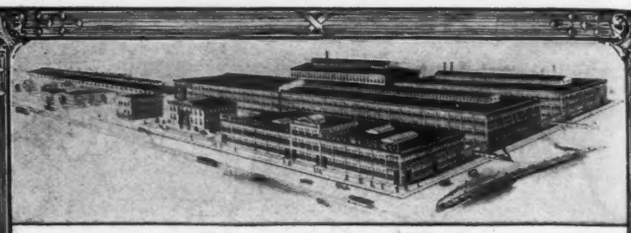
1. **Requires no oil**
2. **Not connected to any moving part of motor**
3. **Simplicity—TWO MOVING parts**
4. ***Does not restrict power output***

Get in touch with us for full particulars on Handy Governors, and how they can be adjusted to your specific requirements.

Handy Governor Corporation

3021 Wabash Avenue

DETROIT, MICHIGAN



U. S. Truck Sales Franchise Presents These Advantages

Permanence:

Established 1909. Third oldest truck company in the industry.

Financial Strength:

Second to none. One of the strongest and most successful. Investigate through commercial agencies and banks.

Manufacturing Facilities:

350,000 square feet of floor space and the most efficient equipment devoted to the manufacture of trucks, cabs, bodies, etc.

Value:

Reasonable price, consistent with quality. Costs less to operate, less to maintain, lasts longer, depreciates less and commands higher resale value.

Complete Line:

U. S. Models 1¼, 1½, 2, 3, 4, 5 and 7 tons capacity.

Established Reputation:

13 years' service under hardest working conditions. 65% of U. S. users operate more than one U. S. truck.

Time-Payment Plan:

Strong financial condition of company enables us to assist dealers in handling time-payment sales on a sound basis.

Factory Co-operation:

Liberal discount, plus active support of factory organization helps to make dealers' investment more valuable.

High-grade dealers needed in territory not adequately covered.

The United States Motor Truck Co., Inc.

Cincinnati, Ohio

United States MOTOR "GOOD AS THE NAME" TRUCK

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Veeder

HUB
ODOMETER

The One Point that Calls for Decision

There is no end of reasons for keeping truck costs; this space wouldn't hold them all. But just think over this fundamental:

The one thing you're buying and getting in a truck, is **mileage.** The question above all is, HOW MUCH?

Veeder

Hub Odometers tell ***what mileage*** you're getting for your money—per gallon of gasoline, per pint of oil, per battery-renewal, per tire-life, per dollar of repair cost.

Nothing in truck operation compares in importance with that profit-or-loss information, obtained steadily and accurately only from a ***"VEEDER."***

The Veeder always adds mileage, whether truck runs forward or backward; totals cannot be falsified. Regular model, adaptable to all standard trucks, $20.00. Special Ford truck model, $15.00. Brief literature on request.

The Veeder Mfg. Co.

10 Sargeant Street Hartford, Conn.

Sales and Service Stations in

Baltimore, Md.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Denver, Colo.
Detroit, Mich.
Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Montreal, Quebec
New York City, N. Y.
Philadelphia, Pa.
Pittsburgh, Pa.
Rochester, N. Y.
St. Louis, Mo.
St. Paul, Minn.
San Francisco, Cal.
Syracuse, N. Y.
Toronto, Ont., Canada
Washington, D. C.
—and other cities

Like a bad tooth that causes no pain

IT FREQUENTLY happens that the cleaning of work in process of manufacture is regarded as O.K. for the reason that no complaints have come to the attention of the higher executives.

Yet often cleaning costs are too high, too much labor is expended, too much work is rejected and cleaned twice, uneconomical methods are used—and still nobody bothers to improve cleaning methods! It takes a severe toothache to bring about corrective treatment.

Common factory ailments such as a high percentage of rejects after plating or japanning, or trouble in assembling parts, are often directly traceable to, but not charged against, *improper cleaning*.

Due to improper cleaning an auto plant used to run 6% rejects in the japanning room. By cleaning parts with Oakite materials rejects were cut to 1/8 of 1%, practically a perfect score.

There have been many such instances where Oakite methods and materials have succeeded in doing a much better cleaning job than was formerly deemed possible. And this means that they have made it possible to clean the work perfectly, in less time, with less labor, and at less cost.

Will a critical examination of your cleaning methods reveal that it is costing you *more than you think it does and more than it ought to?* The way to find out is to compare your methods with the best standards of practice.

Ask to have an Oakite Service Man drop in to see you—it incurs no obligation. Have a friendly talk with him about your cleaning problems. Find out what he can do. Out of his broad experience and ability you are sure to get some helpful ideas that will be worth while. It is a little thing to do—but a big step in the right direction.

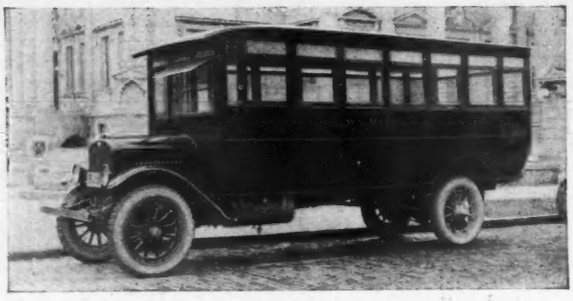
OAKITE

MANUFACTURED BY
OAKLEY CHEMICAL CO.
38 THAMES STREET · NEW YORK

McKay Bus and School Bodies

BODIES OF ANY CAPACITY

MADE FOR ENDURANCE SERVICE and EASY RIDING



No. 416E

THE BEST-BUILT BUS BODIES ON THE MARKET AT THE PRICE

AN ATTRACTIVE PROPOSITION TO MANUFACTURERS AND DEALERS

ASK FOR FULL INFORMATION

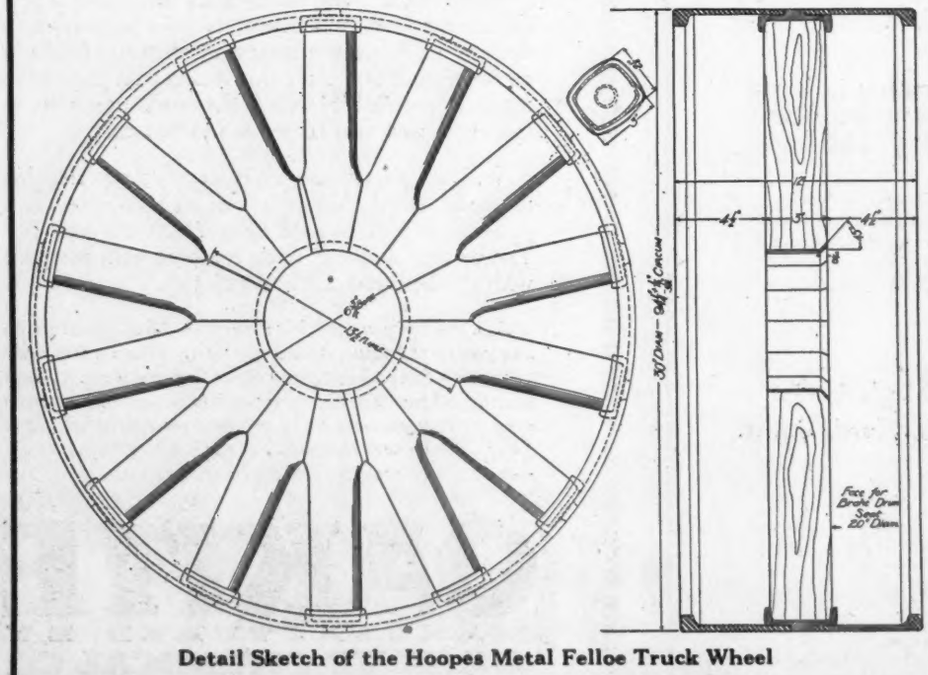
McKAY CARRIAGE COMPANY **GROVE CITY, PA.**

DISTRIBUTORS:

LANSING BUS CO., LANSING, MICH. COLLINS CARRIAGE CO., PHILADELPHIA, PA.

1867 **Hoopes, Bro. & Darlington, Inc.** 1922

WEST CHESTER, PA.



Detail Sketch of the Hoopes Metal Felloe Truck Wheel

This Wheel is

STRONGER

LIGHTER

and can be produced to

COST LESS

than any other truck wheel we know of.

What more can be desired?

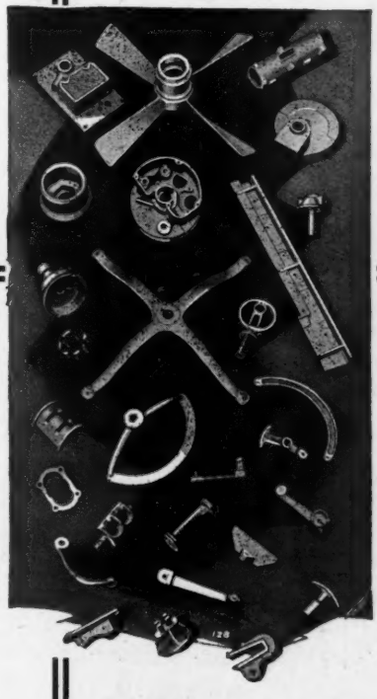
DOEHLER

The World's Largest Producer of

DIE-CASTINGS

In purchasing die-castings, you'll get just what you are willing to pay for—in the way of quality, accuracy, uniformity, strength, delivery. There's no such thing as a "bargain" in die-castings, as the word "bargain" is ordinarily used. Yet, it is a matter of repeated experience on the part of die-casting users the country over, that Doehler—with the unequalled facilities afforded by his large plants and with a mastery of the art gained in fourteen years of specialization—can and does produce and sell die-castings which you can use with profit. You'll pay less for the service you get from a Doehler Die-Casting, than for any other. And it's the service a die-casting gives you that you are buying—not just so much metal.

DOEHLER DIE-CASTING CO.
BROOKLYN, N.Y.
CHICAGO, ILL. TOLEDO, OHIO.



Doehler die-cast parts for automotive equipment—accurate, uniform, high in quality.

Ask the User

Truck owners and builders know from experience that Inland Piston Rings give greater effective service because their design and construction follow highest mechanical standards. All Inland Rings, both Spiral Cut and Oiless, are heat treated by the famous Inland process, which increases their spring tension and holds the rings *permanently* true to shape when subjected to the intense heat of the combustion chamber. All warp or buckle is *taken out* of Inland Rings *before* they go into the motor.

The Inland Spiral Cut Ring, with its patented design, presents no weak places—no gap—equal width and thickness all around—and uncoils like a spring with just the correct tension against every point of the cylinder wall. It "follows the wear."

The Inland Oiless Piston Ring is built with a double groove—top groove acts as a lubrication pocket that prevents friction wear—bottom groove scrapes down any excess oil. Has quick-seating velvet finish.

Order Inlands from your nearest source of supply.

INLAND PRODUCTS CO., Inc.

Main Office and Factory:
ST. LOUIS, MO., U. S. A.

Branch Offices and Stocks in Principal Cities

INLAND

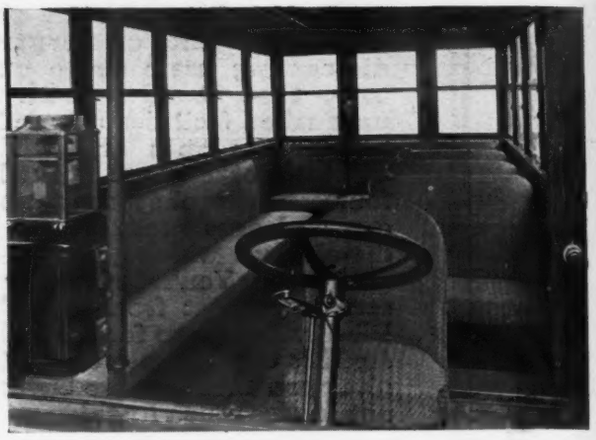
ONE-PIECE PISTON RINGS

The 1922 Fay Bus

The result of 5 years' experience carrying 11,000,000 passengers over 7,000,000 miles.

Seating capacity, 20 passengers. Peak load, 36.

The pay load is distributed equally over the four tires.



Dealers: The Fay Bus Proposition is Unusual

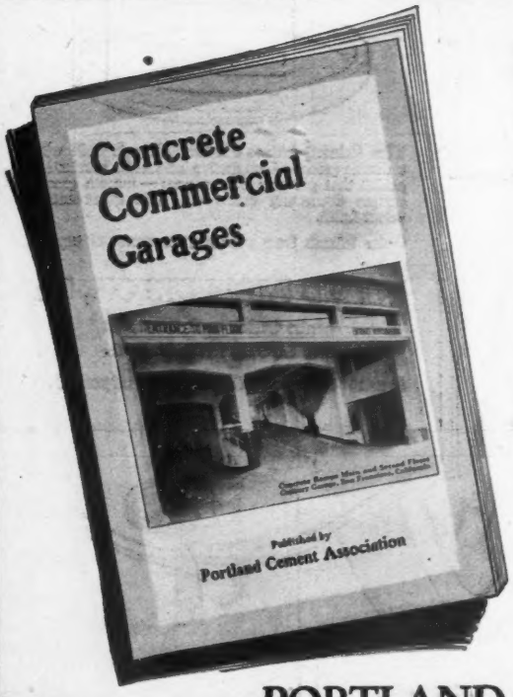
We merchandise Fay Bus sales for you. A complete system of operations is prepared for your customer. Routes are surveyed, books opened, and other constructive measures offered which save your customer the price of the bus in the first year's operation.

Better Write at Once for Our Unusual Proposition

THE FAY COMPANY

Manufacturers and Engineers of Motor Bus Operations

Rockford **Illinois**



Money-Saving Information for Commercial Garage Owners and Builders

THIS new illustrated booklet, "Concrete Commercial Garages", tells of many new features and economies made possible by the use of permanent, firesafe Concrete construction.

Savings on insurance, reduction of building costs and operating and maintenance expenses, economies in design and use of space, long-span construction, building code requirements—these and many other subjects of immediate interest to those owning, building or planning to build commercial garages, will be found in this booklet.

Send to our nearest office for your copy.
Ask for Booklet S-7.

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Denver	Indianapolis	Minneapolis	Pittsburgh	Seattle
Boston	Des Moines	Kansas City	New York	Portland, Oreg.	St. Louis
Chicago	Detroit	Los Angeles	Parkersburg	Salt Lake City	Vancouver, B. C.
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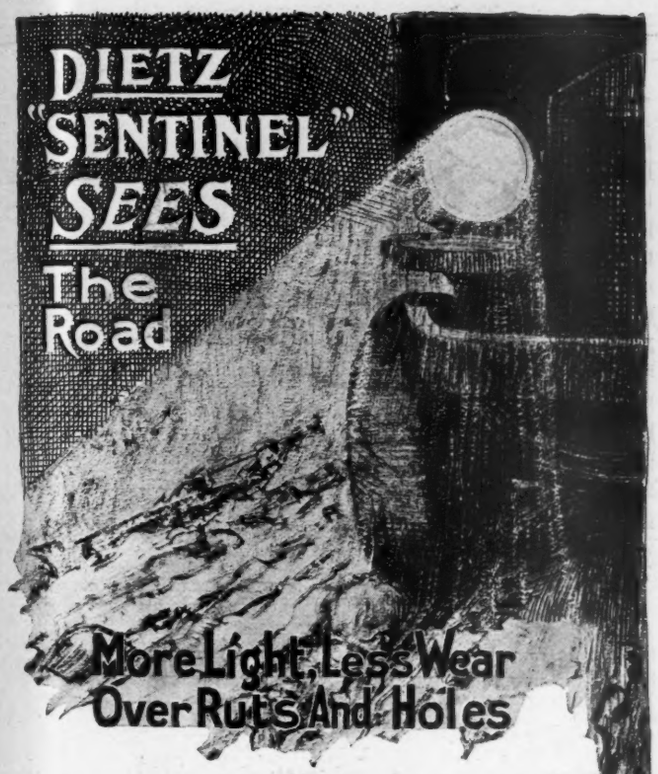
THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION



EVERY bump is a strain. The only way to avoid ruts and bumps at night is to "see them first."

Dietz Drum Shaped "Sentinel" Headlights project a lawful but unusually powerful light—without increase of current consumption. They are made in two sizes, 7½ and 8¾ inch diameters, which provide suitable equipment for all makes of motor trucks and passenger buses. There are eleven styles, comprising shallow and deep-reflector types, with variations of single and two-bulb equipment.

Sell and install Dietz "Sentinel" Headlights and "Vigilant" Tail Lights—the lamps that "see"—and help your customers to escape repair bills and avoid accidents. There is a good retail profit on Dietz Lamps.

Prices and Complete Description Mailed on Request

R. E. DIETZ COMPANY

Pioneer Makers of Vehicle Lamps

60 LAIGHT ST., NEW YORK

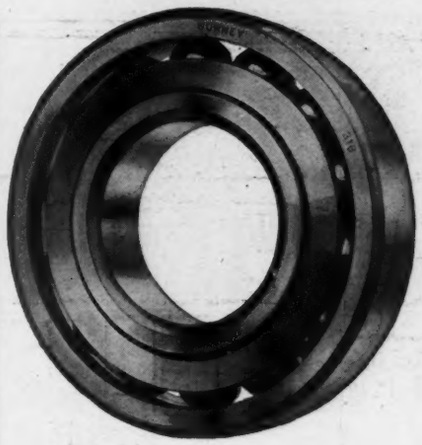
Founded 1849

JAMES BARNES

Sales Manager Motor Truck Lamp Dept., Carter Bldg., Rochester, N.Y.

COMPLETE LINE OF KEROSENE MOTOR LAMPS

DIETZ
"SENTINEL"
ELECTRIC HEADLIGHTS
FOR MOTOR TRUCKS
DIETZ LAMPS



Maximum Safety Factor

COMPARATIVELY for their sizes Gurney Ball Bearings have greater capacity and thus in effect guarantee a maximum factor of safety.

This desirable result is secured by use of the maximum number and size of balls, assembled without use of a filling slot, in raceways whose curvature closely approximates that of the balls. Thus under continuous overload of shock, the theoretical point of contact becomes in fact an area of contact.

Let Gurney engineers assist in simplifying and economizing on your bearing problems.

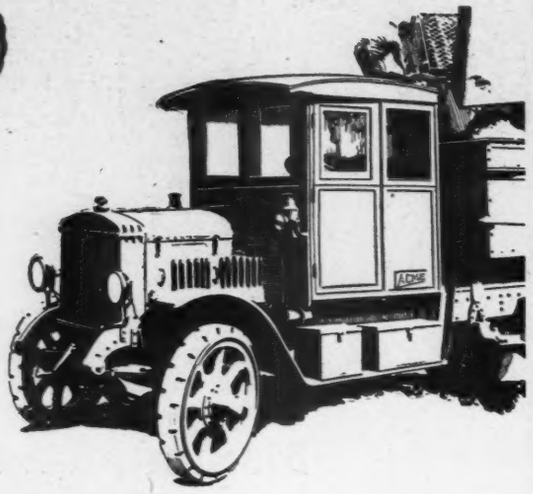
Gurney Ball Bearing Co.

Conrad Patent Licensee

Jamestown, N. Y.

(18130)

GURNEY
BALL BEARINGS



BEST FOR ALL HAULS

A Long Line for Profits

Seven models and sizes—all Acme trucks. That's a long line—sure to build dealer profits.

ACME

—the Truck of Proved Units

Your motor-truck prospects will find one type of Acme to meet their needs—and meet their pocketbook. From speed truck to heavy-duty truck, an Acme-made truck is to be had.

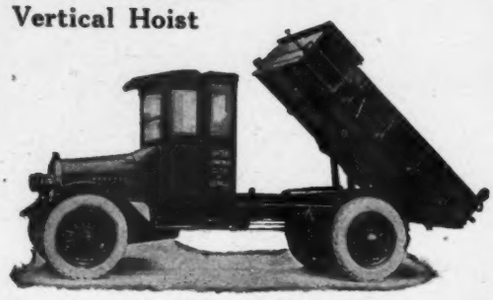
Proved Units—proved performance—*proved profits*—that's what you'll find behind every Acme truck.

We have some worth-while news for dealers. It has to do with greater profits and better business. Drop us a line.

The New Acme Catalog is Ready. Write for Your Copy

ACME MOTOR TRUCK COMPANY
335 Mitchell Street
Cadillac Michigan

Vertical Hoist



Underbody Hoist

Built to Your Customer's Needs

It stands to reason that, when you sell a chassis with a specially-designed hoist, your customer will get 100% service and satisfaction.

ST. PAUL

VERTICAL or UNDERBODY

HYDRAULIC HOISTS

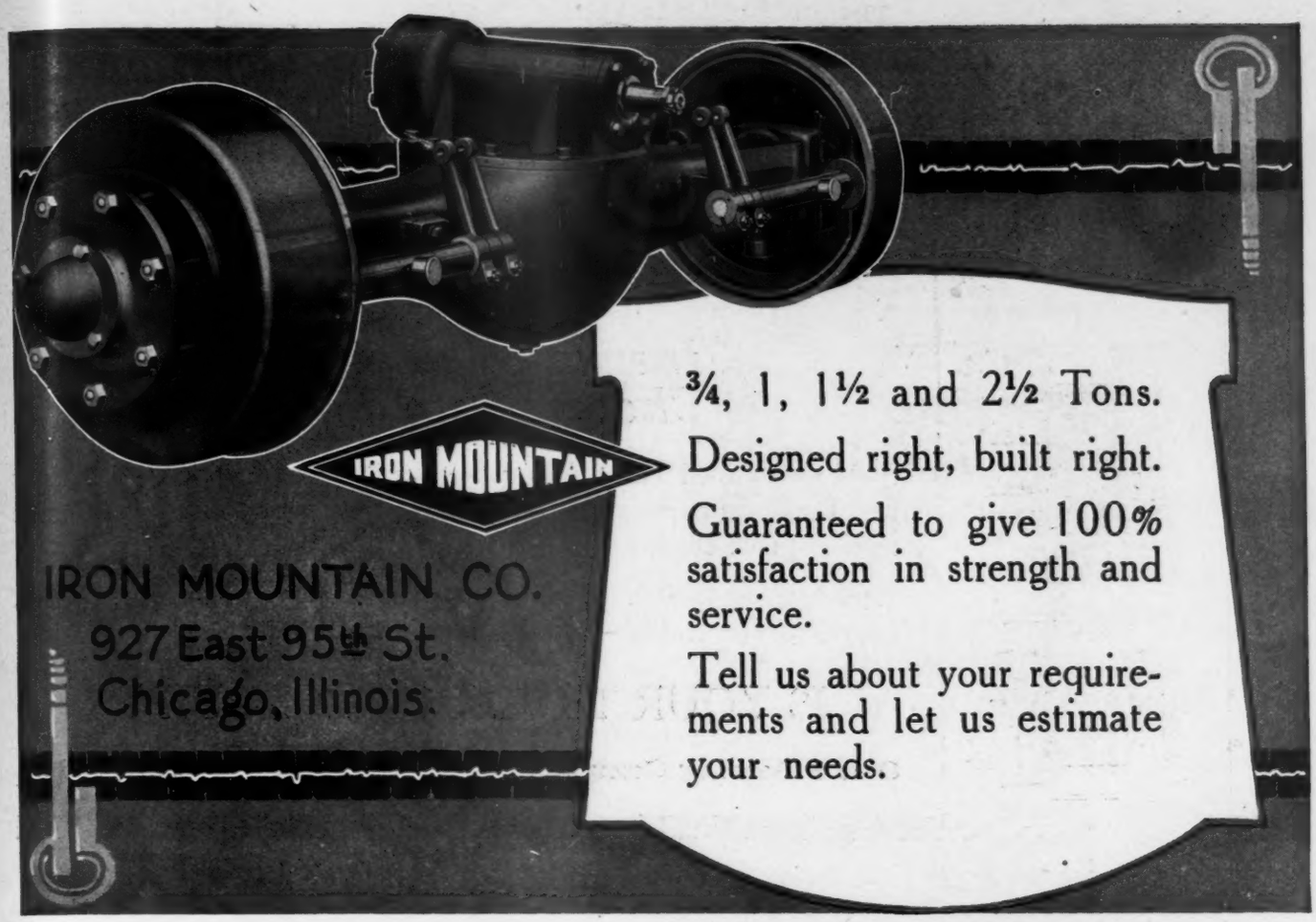
are custom-made. Each hoist is individually designed and built to fit the chassis on which it is to be used.

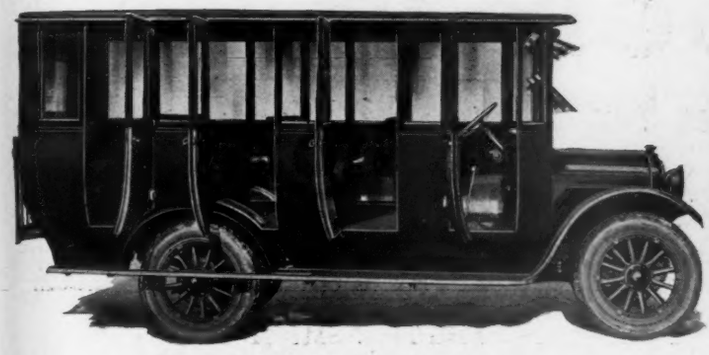
Operated by one man, a St. Paul Hoist dumps a 2 to 15 ton load in one-half minute.

Why not get acquainted with the real money-making possibilities of these famous time and labor savers?

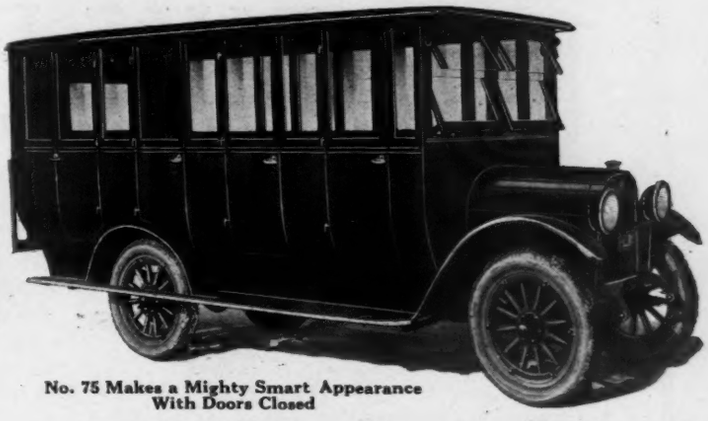
Also ask us about our Superior Steel Bodies, made in 7 models, of 8 gauge steel throughout.

Hydraulic Hoist Mfg. Co.
292 Walnut St. St. Paul, Minn.


IRON MOUNTAIN
IRON MOUNTAIN CO.
927 East 95th St.
Chicago, Illinois.
¾, 1, 1½ and 2½ Tons.
Designed right, built right.
Guaranteed to give 100% satisfaction in strength and service.
Tell us about your requirements and let us estimate your needs.



Ample Seating Space and Leg Room for 16 Passengers in No. 75



No. 75 Makes a Mighty Smart Appearance With Doors Closed

Recommend This Limousine-Type No. 75 Bus Body

It's the last word in bus-body construction.

Sells exceptionally fast at the low price made possible by quantity production. Built with custom-made care by bus-body specialists.

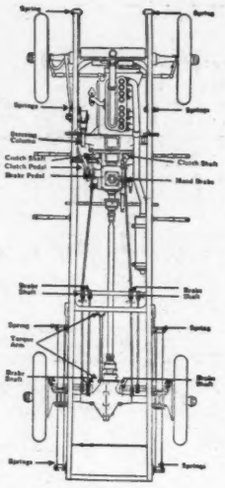
Genuine black leather or canvas-back closed rattan upholstery. Regular sedan-type windows lower into doors. 20 gauge auto body sheet steel panels. All other units equally high class. *Write for Our Unusual Proposition*

FITZ JOHN-ERWIN MANUFACTURING CO., ***Exclusive Bus Body Builders,*** **Muskegon, Mich.**

"FITZ-ER" CUSTOM BUILT QUALITY BUS BODIES

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

"Inaccessible" chassis parts which stay permanently lubricated with O & S Never Oil Bearings and Bushings.



O & S NEVER OIL

BEARINGS AND BUSHINGS

(PATENTED)

Insure Neglect-Proof Chassis Lubrication

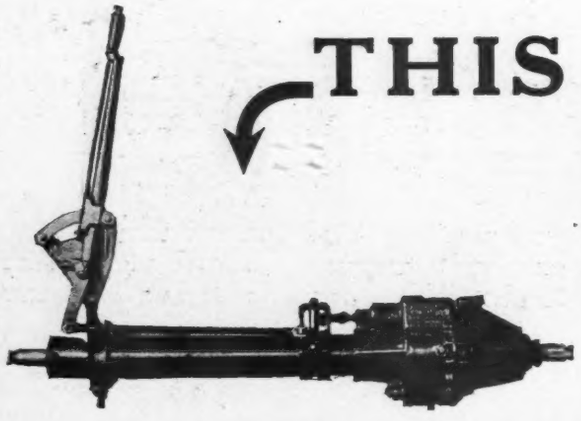
Steel shells lined with a fibrous lubricant, O & S Never Oil Bearings and Bushings outwear the parts where they are applied—and insure neglect-proof chassis lubrication.

Used by over half the truck industry because they minimize rattles, squeaks, depreciation—*and make easier truck sales.*

IS YOUR TRUCK O & S EQUIPT?

O & S Bearing Company **Detroit, Mich.**

THIS DOES IT



Gives You Power When You Need It

With the AHLBERG TRANSMISSION installed in a Mack AC truck, six speeds ahead and two reverse speeds are obtained.

The standard gear ratios are reduced 62½ per cent, which eliminates the bucking and straining of the entire truck on a hard pull. Even when loaded to capacity, the truck equipped with the AHLBERG TRANSMISSION is capable of negotiating grades that previously were impossible with a very light load.

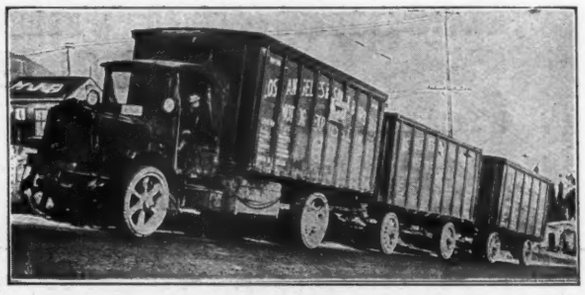
By increasing the driving sprockets after installing the AHLBERG TRANSMISSION on a Mack truck, the road speed can be materially increased, at the same time retaining plenty of power for hard pulls.

Installation can be accomplished in a few hours by any capable shop mechanic. When ordering, specify wheelbase, 156 inches, 168 inches, or 180 inches.

MACK AC MODEL

Price, $259.37, Including War Tax, F. O. B. Los Angeles

We also make transmissions for Ford, White and Dodge-Graham Bros. truck in either under or over drive.



The above illustration is an actual reproduction of a White truck, owned and operated by the Santa Barbara Red Line, hauling a capacity load on both truck and trailers over a five per cent grade.

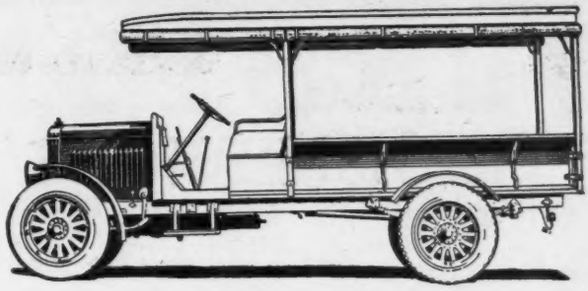
K. E. AHLBERG CO.

120 W. 22d St. **Los Angeles, Cal.**

SCHWARZ WHEELS

Write for full particulars

The
SCHWARZ WHEEL COMPANY
Frankford, PHILADELPHIA



KISSEL'S TON EXPRESS

THE Ton Express—built for the retailer, merchant, wholesaler, farmer—is a regular One-Ton Kissel Truck in which strength and durability are combined to make it the best value on the market, irrespective of price.

$1585
Chassis—Standard Equipped

$1985
For chassis and body completely equipped with worm-drive rear axle, electric lighting and starter, cord tires, express body and top—completely painted. Prices F.O.B. Hartford, Wisconsin.

KISSEL Motor Trucks 5 Sizes

The complete line of Kissel Trucks creates a sales opportunity that makes the Kissel Franchise in your territory doubly valuable. Also Special Road Builders' Truck, Hoppers, Measuring Boxes, Turntable, etc. Send for franchise details.

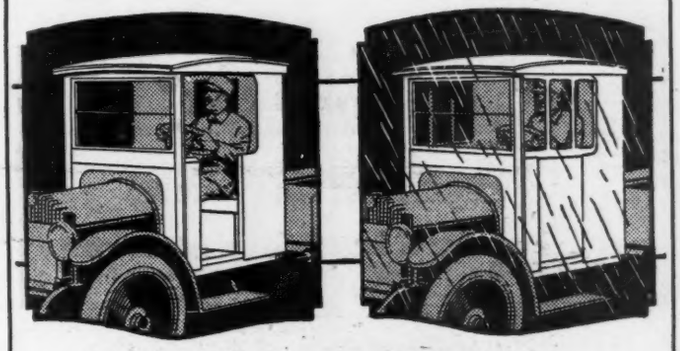
The Kissel Motor Car Co.
Hartford Wisconsin
Originators of the ALL-YEAR Cab for Trucks

SHARON
PRESSED STEEL
FRAMES
FOR MOTOR TRUCKS AND CARS

Sharon Standards of materials and workmanship conform with the standards of the most exacting truck or car builder. Sharon Serviceability adds to the life and serviceability of any car or truck. Send us your specifications. Let our engineers work with yours.

Axle Housings, Axle Housing Covers, Brake Drums, Clutch Discs, Running-Boards, Step Hangers, Torque Arms.

Sharon Pressed Steel Co.
Factory and Main Office
SHARON, PA.



A Cab

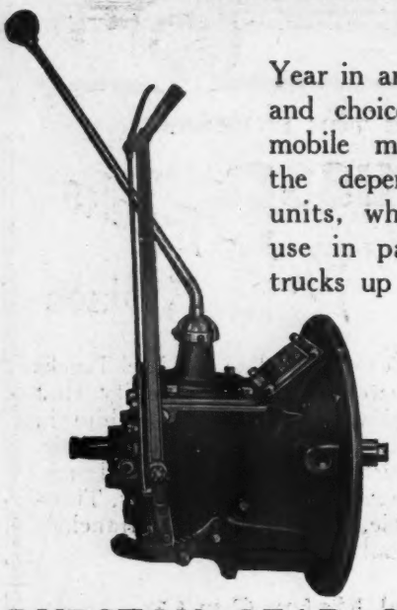
that requires no curtains; that can be converted from a closed to an open cab without the driver leaving his seat; that is equally accessible from either side—this is a necessity in crowded cities where one way streets prevail.

WRITE FOR BULLETIN

The Highland Body Manufacturing Company
403 Township Ave., Elmwood Place, Cincinnati, Ohio
Stocks at Chicago, Detroit, St. Paul, Buffalo, Pittsburgh, New York, Boston, Springfield, Mass., Richmond, Baltimore and Philadelphia

HIGHLAND Cabs

DURSTON
TRANSMISSIONS



Year in and year out service and choice by leading automobile manufacturers prove the dependability of these units, which are built for use in passenger cars and trucks up to 1 ton capacity.

We invite your investigation of their adaptability to your requirements.

DURSTON GEAR CORPORATION
29 Maltbie Street SYRACUSE, N. Y.

ALLSTEEL
Cabs for Motor Trucks

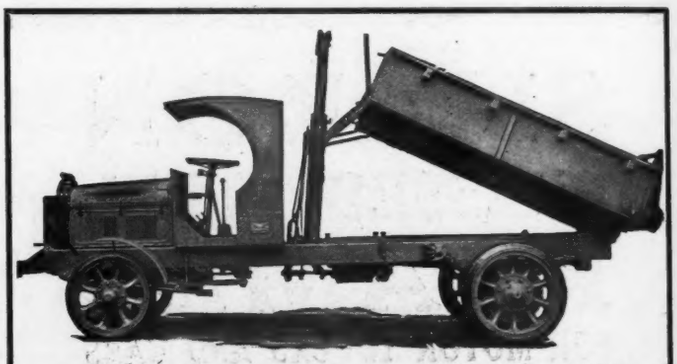
Built of steel—welded and reinforced—good for years of service. Standard or special designs, shipped assembled or knocked down. Complete line of cabs, including open, semi and closed; seats, dashes, cowls, running-boards and floor-boards.

Sheet Steel Products Company
Michigan City, Indiana

Schatz "UNIVERSAL" Registered *Annular* U.S.Pat.Off.
BALL BEARING

A large number of large balls operate in races scientifically formed to support them and maintain perfect alignment. 50% thrust capacity in either direction.

The Federal Bearings Co.
INCORPORATED
Poughkeepsie
NEW YORK



STEWART'S
STEEL
DUMP BODIES

Built to withstand hard usage. Bodies made to give your truck additional service.

Standard and Special Steel Bodies. Let us quote on your requirements.

THE STEWART IRON WORKS CO.
COVINGTON, KENTUCKY
Manufacturers of
STEEL BODIES CABS BUMPERS DASHES RADIATOR GUARDS

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STEERING ECONOMY

To inspect, repair or adjust the Wohlrab Steering Gear it is not necessary to remove it from the chassis—simply remove the top plate from the housing and all working parts may be removed and replaced through this opening.

A TIME SAVER
TIME IS MONEY
CONSIDER THE TRUCK OWNER

The Wohlrab Gear Co.
Racine Wisconsin

BUS SEATS

with deep, comfortable cushions with spring edge.

Bronze corner grip-handle for standees.

Offset back, giving additional aisle room.

Equip your buses with cross-seats. Passengers prefer to ride facing forward.

Write for Cuts and Prices of Seats in Rattan Genuine or Imitation Leather
Also Prices on Rattan Car Seat Webbing

Heywood-Wakefield Company
Factory: Wakefield, Mass.

SALES OFFICES:

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Railway and Power Engineering Corp. Toronto and Montreal
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BUILDERS OF BETTER BUS BODIES

Type AX Body—16 Passenger—Inside width 74"—Inside height, 71"—30" cross-seats, allowing 14" aisle at center—Rear seat full width—Emergency door on left side, just behind driver's seat—Folding door, street-car type, as on this body, furnished only when inside width exceeds 72". Light above door is extra equipment. PRICE, $930.00. DEALERS WANTED.

Bus Bodies, any size, any type, for any chassis. Our Bus Bodies represent REAL QUALITY at RIGHT PRICES and mean SATISFACTION to dealers and users.

GROVE CITY BODY & MFG. CO.
Established 1867
GROVE CITY, PA.

Winther Trucks

A complete line of quality trucks nationally known and appreciated

Winther Motors, Inc.
Manufacturers of
Motor Trucks and Motor Cars
Kenosha, Wis.

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A dual-valve engine uses less gas and delivers more power than any other type of engine.

Pierce-Arrow
TRUCKS

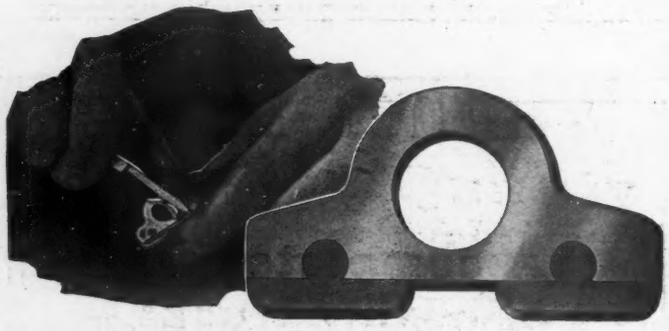
The Pierce-Arrow Motor Car Company
Buffalo, New York

2-ton $3200 3½-ton $4350 5-ton $4850 fully equipped

BABCOCK
VESTIBULE CAB
A Comfy Cab for All Seasons

Send for Catalog

H. H. BABCOCK COMPANY
Founded 1845
Watertown New York



Babbitt Faced—

Leading builders of motor trucks have adopted Babbitt-Faced Laminated Shims. The famous "Peel 'em down to fit" shims, furnished with babbitt lug to hold up the oil pressure and make an all-babbitt bearing. Both production and service are simplified, and operation is improved. *To blueprints or specifications.*

LAMINATED SHIM CO., Inc.
14th Street and Governor Place Long Island City, N. Y.
Detroit: Dime Bank Building St. Louis: Mazura Mfg. Co.

LAMINUM

For Extra Heavy Pulling

The Crane No. 3X is the favorite Puller of the progressive service station that does a lot of repair work on heavy duty motor trucks.

When this sturdy three-arm

CRANE PULLER
The Original Pulling Tool

grips a truck wheel, flywheel, collar, sprocket, etc.—the work *must* give.

Capacity up to 26". Screw, 1½" x 20".

Also made in a two-arm model. Better ask your jobber today to show you the entire line of quality Crane Pullers and Attachments.

Crane Puller Co.
54 Lake Street
Arlington 74, Mass.

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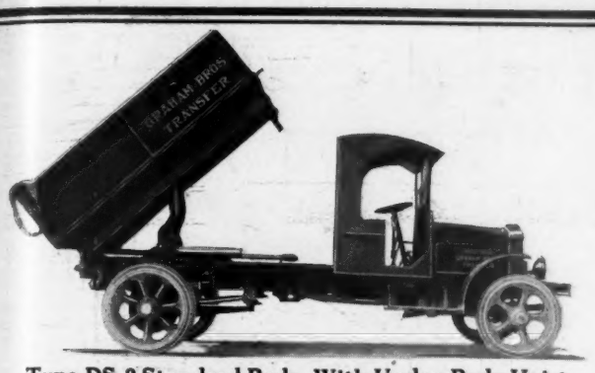

Type DS-2 Standard Body, With Under-Body Hoist
Specially Designed for Heavy Road Work

Greater Dumping Angle Than Any Other

Quick, clean dumping depends largely upon the dumping angle. Standard DS-2 Type bodies, equipped with under-body hoists, give a greater dumping angle than any other equipment.

Extra reinforced. Designed for road or building contractors' work. Body capacities up to six yards, ready for shipment. Write today for full description and new low prices.

STANDARD STEEL WORKS
Holmes and 16th Sts. North Kansas City, Mo.
All Repair Parts Carried in Stock at Kansas City

STANDARD DUMP BODIES AND HOISTS

ASBESTOS S-M-C BRAKE LINING

S-M-C Asbestos Brake Lining

The Result is S-M-C

First, the finest asbestos — closely woven, with friction wire interwoven.

Then, impregnation with the Special S-M-C Compound, which assures quiet, dependable brake action. This treatment gives it longer life, throughout which its original high co-efficient of friction remains.

Lastly, the S-M-C triangular trade-mark, shown above—which is notification to the eye and mind of the truck owner that he is getting the finest of brake linings, made just this way. It pictures to him **Safety Made Certain.**

His confidence in that mark creates confidence in the seller of the lining that bears it.

S-M-C FRICTION RINGS are perfectly round and uniformly thick—woven of long-fiber asbestos, they give doubly long service.

STAYBESTOS MFG. CO.
4602 Germantown Ave. Philadelphia, Pa.
The Modern Factory, Devoted Exclusively to the Manufacture of Brake and Transmission Lining

Joint Dealers' Agencies
at desirable points are open for

DETROIT TRAILERS

Reversible, Non-Reversible, Semi-Pole, Dropped Frame, Industrial and Passenger Car—

Mansfield Steel Corporation

Line of Gravity Dump Bodies, Flat-Bottom Bodies with Power or Hand Hoist; Trailer or Towing Attachments for Trucks; Radiator Guards and Front Bumpers (listed as standard by Underwriters' Laboratories) and other desirable and good selling devices. Address either:

Detroit Trailer Company
or
Mansfield Steel Corporation
Both Located at
954 East Milwaukee Ave., DETROIT, MICH.
Our mammoth shops are equipped to handle nearly everything in the transportation line

Eugol, the one-ton speed truck, is making real—not paper—profits for Eugol dealers. Why? It gives the maximum of service; requires minimum of dealer servicing.

Some Choice Territory Still Open. Write

Eugol Motor Truck Company
General Offices: 116 S. Michigan Ave.
CHICAGO, ILL.
Cable Address: "Eugol Chicago"

EUGOL SPEED TRUCK

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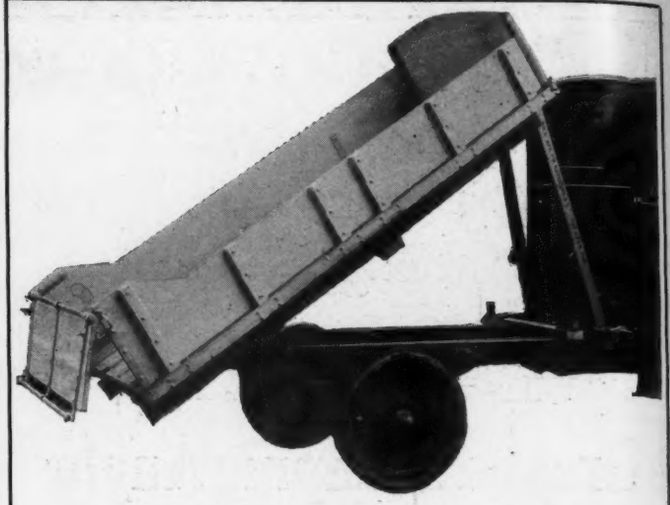
DENBY
MOTOR TRUCKS

MODEL 33, 1½-2 TON BUS
ONE OF FLEET OPERATED BY
STAR TRANSPORTATION COMPANY
MASON CITY, IOWA

SWIFT—ECONOMICAL—POWERFUL

Denby Motor Truck Company
DETROIT, U. S. A.



ROCK TYPE H HOIST

A highly efficient, well designed and carefully built hand hoist for dump bodies up to 3½ ton capacity.

Cut gears are used on the winch.

Can be mounted on any width of chassis without change.

Occupies but 9″ of space.

No holes required in frame for mounting hoist.

Dumping angle from 35° to 45°.

Price, With Body Hinge, $85.00

ROCK MANUFACTURING CO., Waterloo, N. Y.

A. B. & B. Quality Tanks
Sheet Metal Parts That Last

For Quality Truck Makers

Ever stop to think how much buyers are influenced by the appearance of the sheet metal parts of your truck? The tanks—hoods—fenders—shields—dashes—tool boxes, etc.

Made by us, the sheet metal parts of your assembly will retain their handsome appearance indefinitely. Because we have the modern facilities, the skilled organization, the long experience to design them right—make them right—at right prices.

Samples of stock, accompanied by our estimates, will furnish the convincing proof. **Write for them—and send us your specifications.**

Soldered Tank Made of Terne Plate

A. B. & B.
Sheet Metal Works
Fond du Lac Ave., at 33d St.
MILWAUKEE, WIS.

FlinT FRONT AXLES

Capacities: 1000 Lbs. to 2 Tons

Made by Front Axle Specialists

Present-day competition will not permit skimping on the quality of truck front axles.

If you make 1000 lbs. to 2 ton capacity jobs, put your front axle problems up to the Flint Motor Axle Company.

We specialize on quality front axles, within those capacities.

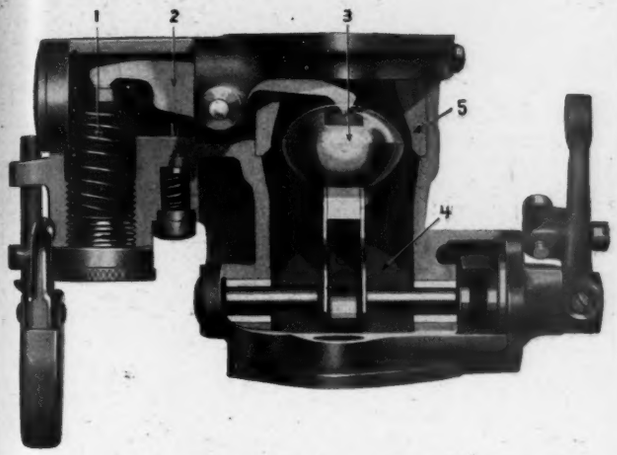
A modern drop-forge plant—special machinery—newest heat-treating equipment—thoroughly up-to-date metallurgical instruments—assure you quality front axles. And quantity production spells right prices and fast deliveries.

What are your requirements?

WE ALSO MAKE QUALITY FRONT AND REAR AXLES FOR PASSENGER CARS.
WE SPECIALIZE ON HUBS ALSO

FLINT MOTOR AXLE COMPANY
Flint, Michigan

NEW MONARCH GOVERNOR MODEL G



Extreme simplicity of design and substantial construction are two distinctive features of the new Monarch Governor. Note that the compression type spring provides a wide range of governed engine speeds. Suitable adjustment is obtained by simply removing cap at bottom of spring housing and turning the slotted screw provided for this purpose.

Write for Complete Details

Monarch Governor Co., Detroit, Mich.

WALTER Motor Trucks 100% Traction

Greater Pulling Power
Less Gasoline Cost

Capacities

2, 2½, 3½, 5 and 7 Tons

Special Tractors

WALTER MOTOR TRUCK CO.
227 West 61st Street New York, N. Y.

DELIVERS Satisfaction Wherever It Goes

In every land under the sun the Waukesha High Torque motors are doing their good work. A few of the many manufacturers now using these motors are:

Acason Motor Truck Co., Detroit, Mich.
Doane Motor Truck Co., San Francisco, Cal.

Tremendous power with little effort, little wear, and high pull at speeds where it is most useful, are the results of the Waukesha High Torque principle. Insist upon Waukesha motors in your truck.

Waukesha
TRADE MARK

Fageol Motors Co., Oakland, Cal.
Indiana Truck Corp., Marion, Ind.
Luedinghaus-Espenschield Co., St. Louis, Mo.
National Steel Car Co., Hamilton, Can.
Old Reliable Motor Truck Co., Chicago, Ill.
Republic Motor Truck Co., Alma, Mich.
Sterling Motor Truck Co., Milwaukee, Wis.
Stoughton Wagon Co., Stoughton, Wis.
Seagrave-Longhead Co., Sarnia, Ont., Can.
Triangle Motor Truck Co., St. Johns, Mich.
Ward LaFrance Truck Co., Elmira, N. Y.
Walter Motor Truck Co., New York City
Watson Wagon Co., Canestota, N. Y.
Wichita Falls Motor Co., Wichita Falls, Tex.
Wisconsin Farm Tractor Co., Sauk City, Wis.

Manufacturers of Automotive Equipment. Write Us

Waukesha Motor Co.
Waukesha, Wis.

Fruehauf Trailers

BRING REAL PROFITS TO DISTRIBUTORS AND LOCAL DEALERS

TRANSPORTATION is the big problem of big business houses today. It is even a bigger problem for the smaller business house. But all are looking into their transportation costs now closer than they ever did before.

Selling trailers means selling the most efficient method of transportation yet developed. To get the full value of the pulling power of the truck, it must have a trailer. The truck that carries 2 tons will pull 4 tons.

Every trailer you sell a truck operator means a profit to you and money saved for the operator.

We manufacture a most complete line of trailers. Semi-trailers with automatic fifth wheels and trailer supports. Fifth wheels and supports can be attached to any make of trailer. Pole Trailers, Four-Wheel Trailers, circle-steer type and special back-up steering device; also many special machinery models. Write us for information.

Fruehauf Trailer Company
10921 HARPER AVENUE, DETROIT, MICHIGAN

DAY-ELDER

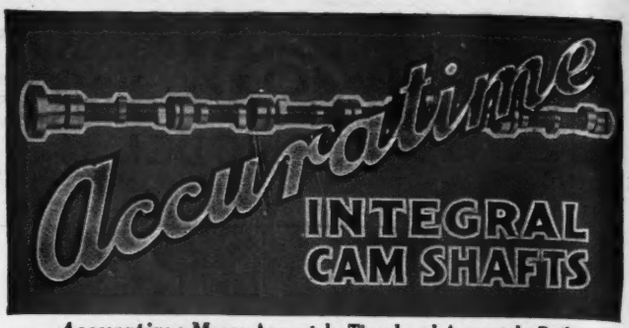
WORM-DRIVE MOTOR TRUCKS

1922 Models and 1922 Prices

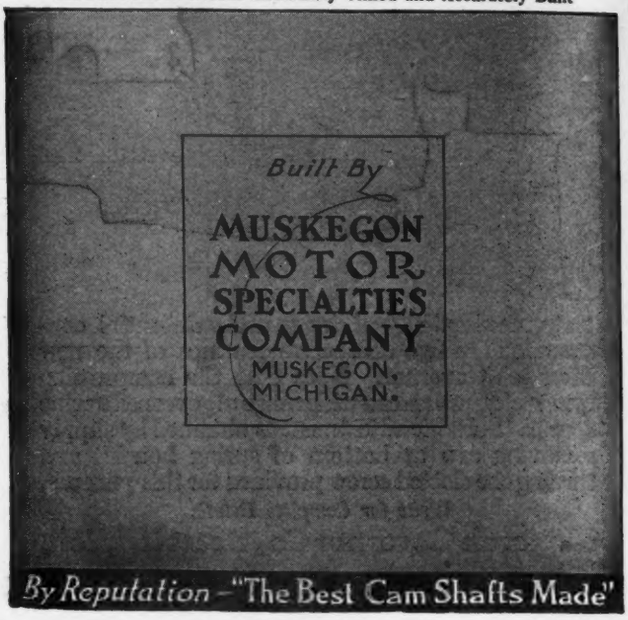
Model A-S, 1 to 1½ ton, equipped with pneumatic tires and electric lights..	$1600
Model B, 1½ to 2 ton.....	2000
Model D, 2 to 2½ ton.....	2400
Model C, 2½ to 3 ton.....	2750
Model F, 3½ to 4 ton.....	3150
Model E, 5 to 6 ton.....	4250

Turn to the detailed truck specifications in this issue of the COMMERCIAL CAR JOURNAL and compare our specifications and prices with competing lines. DAY-ELDER TRUCKS SELL BY COMPARISON. Write for our strong selling plan and liberal dealer proposition.

DAY-ELDER MOTORS CORP.
NEWARK, N. J.



Accuratime Means Accurately Timed and Accurately Built



A *Selling* Demonstration of the

ARCHER

STEEL DUMP BODY AND HAND HOIST

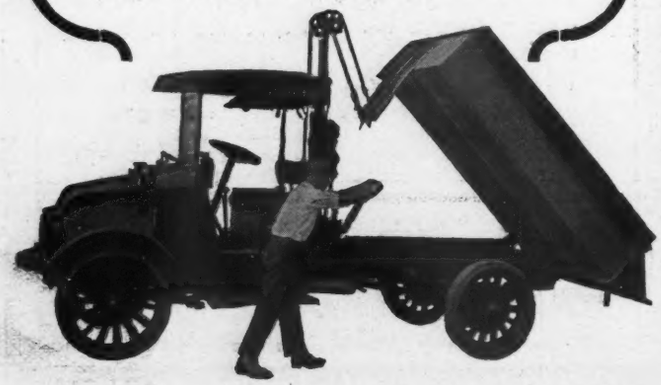
Show your customer how, with this easy-to-operate outfit, one man readily dumps the entire load. *Such a demonstration will sell the buyer,* because he will see with his own eyes the Archer's superior time and labor-saving features.

For road builders, coal concerns, grain merchants—for every business that needs efficient dumping equipment.

Write for special dealer proposition.

Our Standard Dump Outfits Fit All Makes of Trucks From 1 Ton to 5 Ton Capacity

ARCHER IRON WORKS
2450 West 34th Place, Chicago



FISK

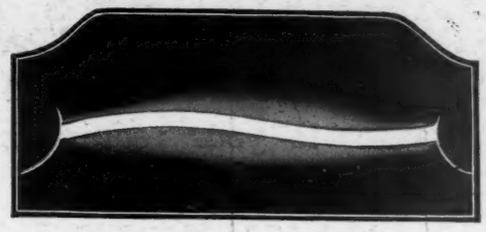
FLAT TREAD TRUCK CORD TIRES

GIVE much greater traction, because they have 35% more road contact than ordinary truck tires, size for size.

Especially designed side-wall permits greater flexing and gives greater cushioning of load and mechanism.

The easiest-selling truck tire in the world.

THE FISK TIRE COMPANY, Inc.
Chicopee Falls, Mass.



The White-Hot Spark You Want, When You Want It—and Every Time!

Insure continuous service of your truck or speedwagon by installing the ever-dependable Eisemann Magneto.

We have the necessary attachments.

Full particulars on request.

THE EISEMANN MAGNETO CORPORATION

Detroit Brooklyn, N. Y. Chicago

Service Stations in Principal Cities

THREE B BBB BLOOD-BROTHERS-MODEL-B UNIVERSAL JOINTS

In the Front Ranks of Proved Units

Only proved units interest discriminating automotive engineers. Hence: the immediate adoption of Model B Universal Joints.

Oil is force fed to Oversize Bearings through a single opening by centrifugal action, insuring positive, convenient lubrication and dependable performance.

Bushings completely supported.

Details on Request

Blood-Bros. Machine Co.

PIONEER BUILDERS OF UNIVERSAL JOINTS

ALLEGAN MICHIGAN

F. SOMERS PETERSON CO.
San Francisco, California-Western Representative

USE IT!

The Chilton Symbol is displayed by manufacturers in their advertisements to inform you that they have placed catalog information about their lines in the current issue of the CHILTON AUTOMOBILE DIRECTORY. Look for it. Use it by consulting the information to which it refers you. Save time and trouble.

Chilton Automobile Directory

(Published Quarterly)

Market and 49th Streets Philadelphia, Pa.

Rowe THE PIONEER TRUCKS

Complete Line Worm-Driven Trucks
¾ to 6 Ton Capacity

ROWE COMMERCIAL BODIES
BODIES OF UNUSUAL CONSTRUCTION

Valuable Territory Open to Dealers
Write for Catalogue

ROWE MOTOR MANUFACTURING CO.
LANCASTER, PA.

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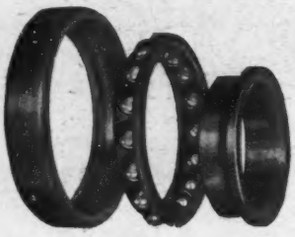


WESTERN SALES OFFICE
1012 FORD BUILDING
DETROIT, MICH.

THRUST BALL BEARINGS, ANGULAR CONTACT THRUST BEARINGS and ANGULAR CONTACT RADIAL BEARINGS made to your requirements and dimensions. STAR BALL RETAINERS for Thrust, Magneto and Cup and Cone Bearings.

THE BEARINGS COMPANY OF AMERICA
Lancaster, Pennsylvania

WYMAN-GORDON

The Crankshaft Makers

Worcester Division
WORCESTER, MASS.

Ingalls-Shepard Division
HARVEY, ILL.

Peerless Hoist, Showing Body Hitch
Worm and Gear, Machine Cut
We Furnish Body Hitch

The Only Logical Choice for Dealers

There is every reason why the Peerless is the logical hoist for you to sell. The discount is so liberal that your time is well paid for and a handsome profit is earned on every sale. The price appeals to your customers, as it is from one-third to one-half lower than the cost of other hoists.

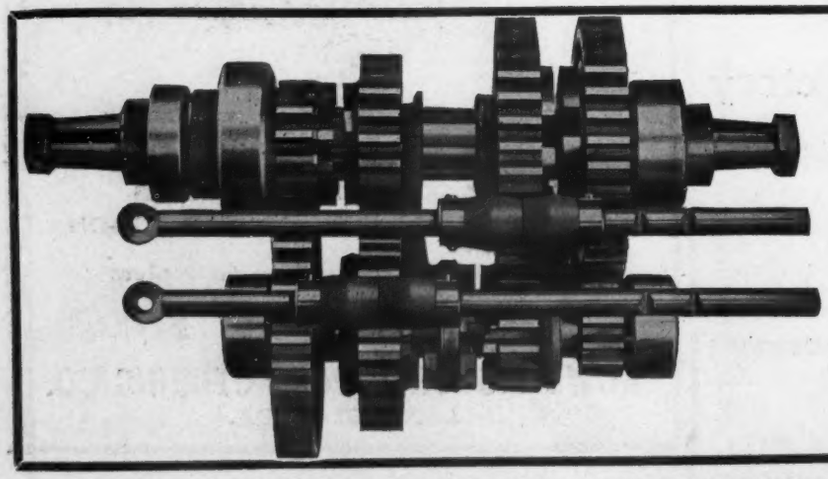
But profit and price would make little appeal if you did not conscientiously believe that the

Peerless Hand Hoist

was superior in mechanical perfection and operation to any other lifting apparatus made. Rest content! It is *the only* efficient hoist that can be attached to either steel or wood bodies. It is *the only* efficient hand hoist that sells at a moderate price. These are pretty strong reasons why you should consider its sales possibilities. An operator can hoist from one to four tons in from one to four minutes. What more could be required on speed? You are getting calls for hoists and are often undecided as to *which* hoist to recommend. We'll tell you *why* the Peerless fills the bill every time. Will you let us?

Alsteel Bodies Guaranteed to Take Care of 100% Overload Under Rough Usage

The Auglaize Hoist and Body Company
New Bremen, Ohio



COTTA GEAR CO.

INDIVIDUAL CLUTCH TRANSMISSIONS

FOR

3½, 5 and 7 Ton Trucks

Notice the short, compact and husky construction.

Long bearings in the loose gears.

COTTA GEAR CO., Rockford, Ill.

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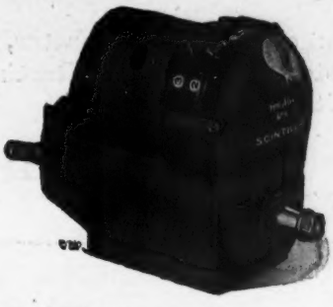
SCINTILLA

For 1 to 12 cylinder motors



RECOGNIZED by the most critical engineers as the highest grade and most reliable ignition system.

In the Scintilla magneto, manufactured in Switzerland, the *magnet rotates*, and the *winding, contact breaker, etc.*, are *stationary*. This new construction, finest materials and Swiss workmanship, insure long and unfailing performance so necessary for motor truck engines.

Booklet sent on request

SCINTILLA MAGNETO CO., INC.
225 WEST 57th ST. NEW YORK, N. Y.

Rely on York Sheet Metal Parts

In closing the sale of your truck, the Sheet Metal Parts play a surprisingly large part —when they are York-made.

Not only are York Sheet Metal Parts rugged in construction and reasonably priced—they are uncommonly handsome in appearance. And that certainly helps make truck sales.

Do you need Fenders, Tanks, Hoods, Radiator Shields, Tool Boxes or Special Stampings? Ask us to quote you—this doesn't obligate you in the least.

York Corrugating Co.
York, Pa.

This Symbol Serves You

because its appearance in a manufacturer's advertisement signifies that complete information about the product advertised may be procured by consulting the current issue of the CHILTON AUTOMOBILE DIRECTORY.

It tells you *where*, without loss of time, you can secure detailed buying data, enabling you to purchase immediately. Watch for it in advertisements. It simplifies your buying.

Chilton Automobile Directory
(Published Quarterly)
Market and 49th Streets Philadelphia, Pa.

COUNTERBALANCED PARK CRANKSHAFTS

Patented July 10, 1917

We have shipped 137,852 Counterbalanced Crankshafts up to Aug. 26, 1922.

THE PARK DROP FORGE COMPANY
Cleveland, Ohio

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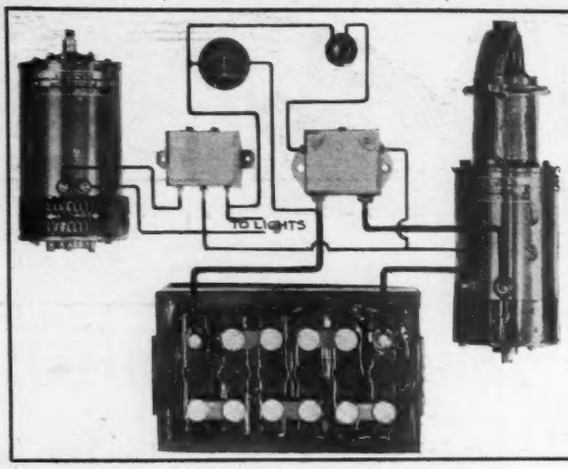


Leece-Neville 12 Volt Electric Starting and Lighting System for Motor Trucks

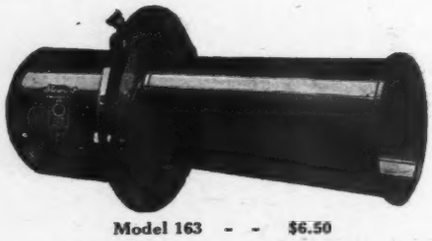
Showing Connections of Motor, Generator, Circuit Breaker, Ammeter and Magnetic Starting Switch to Battery

THE LEECE-NEVILLE COMPANY
CLEVELAND, OHIO

For Trucks

Model 131-Y, $25.00
Model 76-B, Mileage Recorder only, $18.00

Model 114 - $5.00
Model 151, Slanting Plunger - $3.50



Model 163 - - $6.50
Model 186 - - $10.00

STEWART-WARNER SPEEDOMETER CORP.
CHICAGO, U. S. A.

Adds Years to the Life of

Your Light Delivery Truck Assembly

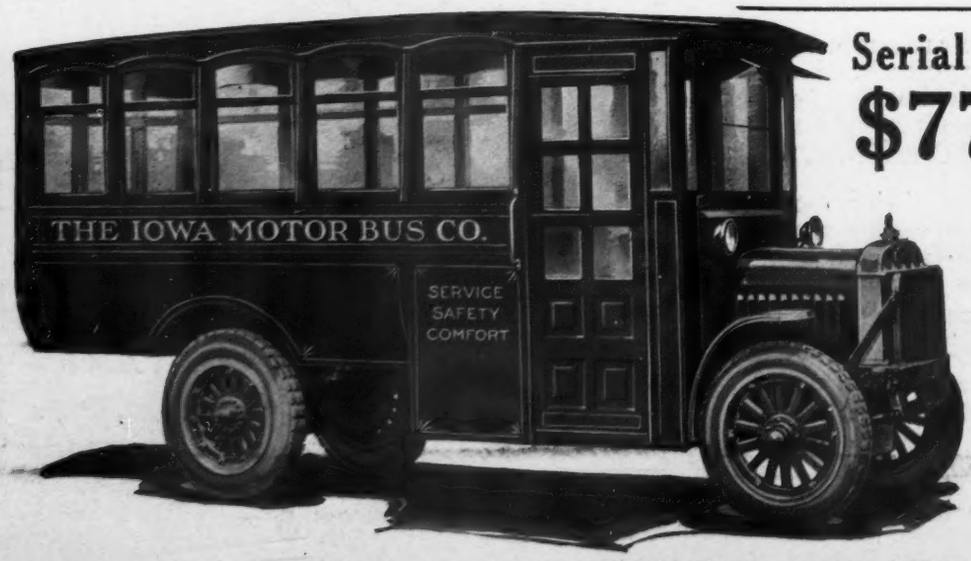
Only in the Columbia Single Reduction Bevel Gear Axle will you find those features of construction that will add years to the life of your light delivery, high-speed truck assembly.

The famous Columbia one-piece housing—pressed from a single piece of steel, and welded once—adds 50% greater torsional strength, ***alone***.

Let us tell you the Columbia story in full. It will pay interested truck manufacturers to write for it to

The Columbia Axle Co. Cleveland, Ohio

COLUMBIA SINGLE REDUCTION AXLES



Serial 70—14 Foot Body
$776.00 F. O. B. FACTORY

Same as Shown at Left

Serial 70—16 Foot Body - $812.00
Serial 70—18 Foot Body - 911.00

Our Serial 50—Lengthwise Seat Body

12 Ft. Body—$420.00 f.o.b. Factory
14 Ft. Body— 447.00 f.o.b. Factory
16 Ft. Body— 473.00 f.o.b. Factory

Send for Complete New Folder in Colors and New 1922 Price List

GREENFIELD BUS BODY CO.
210 Washington Ave., GREENFIELD, OHIO

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"BETTER BUILT" BUS BODIES"

FIRST-QUALITY materials and workmanship are built into our sturdy, distinctive Bus Bodies. Quantity production of standardized units enables us to offer them at extremely moderate prices. You dealers will find these high-class, low-priced bodies powerful aids in closing bus sales.

Complete Catalog and Prices Gladly Sent on Request

BUS BODY CORPORATION
Exclusive Bus Body Builders
Evansville Indiana, U. S. A.

THERE'S A LOAD OFF YOUR MIND

when you know that your cars are fitted with the *original,* genuine

Robert Bosch

Magnetos and Spark Plugs

First in quality for a generation

This Trade-Mark

Trade-Mark

is on every Robert Bosch Product. Always look for it.

Send at once for "Bosch Facts" and interesting descriptive literature

Robert Bosch Magneto Co., Inc.
Otto Heins, President
123 West 64th Street New York, N. Y.
The *original,* genuine Bosch means Robert Bosch *only*

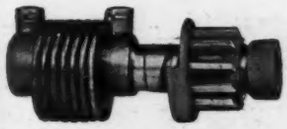
TRUCK DEALERS

INVESTIGATE
THE SCHACHT TRUCK SELLING FRANCHISE

It is the Big Dealer Opportunity for 1922

The G. A. Schacht Motor Truck Co.
CINCINNATI, OHIO

BENDIX
ECLIPSE
DRIVE
for ELECTRIC STARTERS



AUTOMATIC ENGAGING & DISENGAGING

194 Motor Car and Truck Builders Use It

ECLIPSE MACHINE CO.
ELMIRA - N.Y.

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What Is the Future of Motor Truck Merchandising?

Garford has been through the problems of the past.

We know what merchandisers of motor trucks need now and we think we know the requirements of the future.

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We invite your confidence and inquiry about our new plans.

The Garford Motor Truck Company, Lima, Ohio

Manufacturers of 1, 1½, 2½, 4, 5 and 7½ Ton Trucks

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"Good-bye Dobbin!"

TEN or fifteen years ago people were saying: "Well, in a few years from now there won't be a single horse left."

But those people were 'way off, as *you* know only too well.

In selling trucks you've been up against "Dobbin" more times than one. You find him on short-haul routes, in bread delivery and laundry delivery, where runs are short and stops are frequent. On retail milk delivery you've found "Dobbin" still loved and revered as the good old faithful servant.

You've done your best to get in strong with the bakeries, the laundries, dairies, department stores, and others who use horses—but it's always the same old story. "Horses are the cheapest. No siree, you can't possibly sell us motor trucks for horse routes of 2 miles up to 10, 15 and sometimes 20."

But here is where they are *wrong*, and you are the man who can tell them so.

Hundreds of concerns are finding out that on their former horse routes—routes on which they could not afford to use gas cars—*Ward Electrics cost 20% to 35% less to operate than any other type of delivery.*

The Ward-Electric idea started in the baking industry. Bakers all over the U. S. have been saying "Good-Bye Dobbin." Take the Corby Baking Co., for instance. They were operating over 100 horse routes. Then they put in 15 Ward Electrics. They proved themselves from the beginning. Now they have just ordered 90 more Ward Electrics—that lets "Dobbin" out entirely!

Consumer's of Kansas City said Good-bye to "Dobbin" long ago, and today they operate 83 Ward Electrics. The Campbell Bakeries have 100 Ward Electrics, and the combined Ward Bakeries have bought nearly 1000.

In the laundry industry, too, "Dobbin" is passing out; the Chalmette Laundry Co., operating 47 Ward Electrics, say that their Ward Electrics have saved them about $50,000, compared to their former horse delivery.

Even in the dairy field, "Dobbin-that-knows-the-routes," has met his master on house-to-house delivery. The Budd Dairy Co., for instance, put on a Ward Electric in order to get a comparison between the two methods. Today they've got 17 Ward Electrics, and they're saying "Good-bye Dobbin!"

Here's what the whole thing boils down to: Delivery costs too much. Out of every dollar that the average baker, laundry owner, dairyman, ice cream dealer, etc., takes in, 20% to 25%, and in some cases 30%, and more, goes right back into the 40 separate items of horse delivery.

If these concerns can save 20% to 35% of their vehicle operating costs, it amounts to adding to their net profit a sum equivalent to 2% or 3% of their total gross business for the year. That's a mighty important matter to any concern—no matter what its business. A million dollar business means $20,000 or $30,000 added right on to net profits!

Here is Your Opportunity

Here is the splendid opportunity that Ward Electrics hold out to dealers:

Ward Electrics enable you to *complete* your service to users and prospects. Gas trucks for long hauls and Ward Electrics for the countless routes that are now being operated by horses, and that can be more economically operated by Ward Electrics.

Ward Electrics also enable you to meet the competition of "cheap," light gas trucks on city routes. Think what *that* means to you!

Write us for the whole story.

Ward Motor Vehicle Co., Mt. Vernon, N. Y.

Ward Electric Trucks cut delivery costs 20% to 35%

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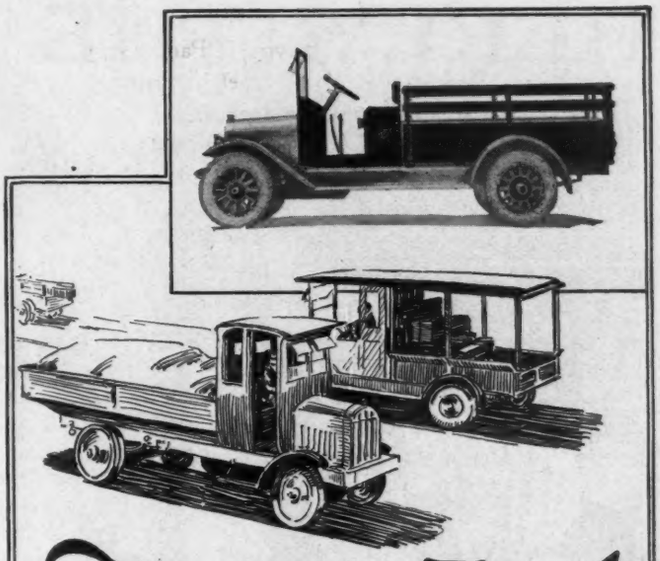

Fit your Truck to its job

Wilson-Built Standardized Unit Truck Cabs and Bodies are a new development in truck-body building. They supply a wide variety of body types, all built from a few units. The bodies are handsome, sturdy, serviceable. Built to Wilson standards, they add value to every truck on which they are used.

The unit type of construction presents numerous advantages—every one a factor for increased profits for you. The units are compact—they require little room for shipment or for storage. A small stock of them enables you to supply every need promptly. Your stock is easily replenished by buying only the units most in demand. Assembly is a simple operation, easily performed by your workmen.

Learn Today How This New Line Solves Your Truck-Body Problem Write for Bulletins Nos. 1-B and 3

C. R. WILSON BODY CO.

Detroit, Michigan Bay City, Michigan

WILSON BUILT BODY
C. R. WILSON BODY CO. Detroit

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HERE'S THE WAY TO SELL

SCHMIDT

HOOK ON OR OFF AT WILL

Anchored—Semi-Anchored—Full Floating

TRACTION DEVICES

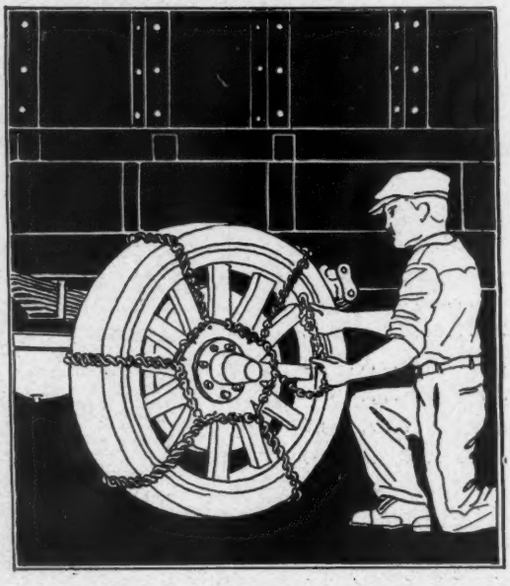
PUT a unit on your prospect's truck. Don't merely explain how they work. Show him by application to one of his own truck wheels why they are the outstanding traction devices on the market. Demonstrate to the truck driver or truck owner how easy they are to operate and that they can be adapted to three positions of wear, which makes them last three times as long as ordinary chains and twice as long as those that can only be reversed. Show them how worn parts can be shifted from tread position to the unit ends and replaced by other unworn sections.

This is the season when your sales of traction devices should be large. Cash in on the unusual patented features of the Schmidt devices. You can increase your sale of traction devices and indirectly the rest of your winter accessory equipment by leaps and bounds if you will take the trouble to actually demonstrate these superior units.

Point out to prospective buyers how it's impossible for them to cut tires. There's an objection to ordinary chains that it's well to anticipate and overcome. Show them how they can't be fastened tight enough to cut the tread. Nor can they pull the spokes, as the strain is equalized thru the chain being snubbed against the steel rim. Call their attention to the positive locking device which is self-adjusting and point out how it's impossible to lose them, for if one loop breaks, the other holds.

ANCHORED POSITION

It only takes a few seconds or minutes, varying with the degree of your familiarity with them, to put them on. First show your customer this anchored position.



If you will exercise some real old-fashioned salesmanship with these out-of-the-ordinary devices to arouse your enthusiasm, the results will amaze you.

Traction devices are needed. These are unquestionably superior to any others made. Clean up!

SEMI-ANCHORED

Second—show them how easy it is to alter the unit from the anchored position to semi-anchored. Your ease of handling them impresses prospects.

FULL-FLOATING

Then complete the demonstration by forming them into a full-floating unit, which is particularly adapted to disc wheels.

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